

## **SOUTH GROWTH AREA**

### **CORRIDOR DEVELOPMENT PLANNING STUDY**

ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM FOR FISCAL YEAR 2002

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**MPO:** SPRINGFIELD-SANGAMON COUNTY REGIONAL PLANNING COMMISSION

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**AUGUST 2005**

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**APPENDIX D** – Iron Bridge/Chatham Bypass Sensitivity Analysis (January 2005)

## 1.0 PURPOSE AND BACKGROUND

During the 1990's the major concentration of urban expansion in the Springfield metropolitan area occurred to the west and southwest portions of the City. The IL Route 4 (Veterans Parkway) north-south transportation corridor has served as the primary catalyst for development on the west side, which has progressed southward. The Village of Chatham located south of Springfield along IL Route 4 is one of the states fastest growing communities in the area, and is expanding northward towards Springfield. Traffic congestion along IL Route 4 and associated east-west routes between Springfield and Chatham has been a growing concern of local and state officials.

In 1999 the *West Loop Feasibility Study* was completed for the Springfield-Sangamon County Regional Planning Commission. This study identified a system of suburban arterial roadways west of Veterans Parkway between County Highway 40 near Chatham and IL Route 97 (Jefferson St.) to best serve the areas growth needs. The study also estimated that approximately 11 square miles of undeveloped land will be absorbed by development in the next 30 years primarily by infilling between areas of existing development. The study recommended completion of the MacArthur Boulevard Extension project to as a way to provide congestion relief to Veterans Parkway.

The Census 2000 Urbanized Area map is included as **Exhibit 1**. The shaded area of the map represents areas that are developed in and around Springfield. A large area on the map that is not shaded as developed between Springfield and Chatham located generally west of Interstate 55 and south of Interstate 72 has been named the "South Growth Area" for its proximity to Springfield and its development potential.

In December 2001, Sangamon County received a state funded grant through the Illinois Tomorrow Corridor Planning Grant Program to support planning activities related to future development and transportation facilities within the South Growth Area. The purpose of the grant program is to help local governments in the development of land use and infrastructure plans thus resulting in reduction of traffic congestion, preservation of open green space, promotion of public and private investment and development, and an improvement in the quality of life. The county enlisted Crawford, Murphy and Tilly, Inc. for the "South Growth Area Corridor Development Planning Study", initiated in February 2003. The study area map is included as **Exhibit 2**.

## 2.0 PROGRAM GOALS AND OBJECTIVES

The primary goal of the Illinois Tomorrow program and this study is to bring together the necessary intergovernmental stakeholders to support development of a coordinated plan for the orderly expansion of the South Growth Area. Objectives of the program and study include the following:

- Establish an efficient transportation network to serve the South Growth Area.
- Confirm that the proposed land use plan is compatible with the established transportation network. Update comprehensive plan as required.
- Identify and confirm high priority transportation network links.
- Evaluate the need for a new north-south County Highway west of IL Route 4 (Veterans Parkway) from south of Chatham to Wabash Ave.

### 3.0 TECHNICAL ADVISORY COMMITTEE

In June 2004, during a project review and coordination meeting, the County proposed the formation of a Technical Advisory Committee (TAC) composed of representatives of the Springfield-Sangamon County Regional Planning Commission (SSCRPC), Sangamon County, City of Springfield, Village of Chatham, and the Illinois Department of Transportation, due to the regional impacts of expanding or developing new transportation corridors. The TAC's role was to meet periodically throughout the course of the study and provide input and direction to the study team while reaching consensus on the final recommendations of the South Growth study. The appendix includes documentation of the TAC's involvement in the project.

### 4.0 EXISTING TRANSPORTATION NETWORK (2003)

#### 4.1 Land Use

Existing land use within the study area consists primarily of a mixture of agricultural, residential and commercial uses. For the purpose of traffic modeling the existing land use was further defined by extracting household and employment data for the year 2000 for the Springfield/Chatham planning area from the *Census Transportation Planning Package (CTPP) 2000*. This data was expanded to 2003 based on 2000-2003 residential and employment growth information and is shown in **Exhibits 3 & 4**. The 2003 data is consistent with the future land use as projected generally in the *2020 Springfield Comprehensive Plan*, which is considered a graphic representation of the goals, policies and objectives of the comprehensive plan.

#### 4.2 Functional Classification

The existing transportation system can be described by its functional classification, which is the grouping of streets and highways into classes based on the character of service they provide to the traveling public. Although the higher classified roadways generally carry higher traffic volumes, roadways are classified by the function they serve and not by the amount of traffic they carry.

The roadway functional classification system map for the city of Springfield was provided by Illinois Department of Transportation (IDOT) and consists of seven categories for the roadway functional classification, namely interstate, freeways/expressway, major arterials, minor arterials (urban/non-urban), major collector, minor collectors and local streets (urban/non-urban). **Exhibit 5** shows the functional classification of roadways in the study area.

#### 4.3 Traffic Volumes

Traffic count data provides indication of each roadway's relative loadings and are used to identify deficiencies and develop appropriate improvements. Traffic volume data or Average Annual Daily Traffic (AADT) counts for the year 2003 on several roadway segments and external stations in Springfield was provided by Illinois Department of Transportation (IDOT). The 2003 AADT counts for the study area are displayed in **Exhibit 6**. Roadway segments in the South Growth Study Area with the highest volumes are listed in **Table 1**.



**Table 1: 2003 Highest Volume Roadway Segments**

<b>Roadway</b>	<b>Location</b>	<b>2003 AADT</b>
I-72/I-55	East of I-55	45,900
I-55	South of I-72	40,800
I-72	West of I-55	34,200
Route 4	North of I-72	34,000
6 <sup>th</sup> Street	North of I-72	32,000
Stevenson Dr	West of 6 <sup>th</sup> Street	27,900
Wabash Avenue	East of Route 4	27,500
Chatham Road	North of Wabash Ave	22,100
Route 4	South of I-72	19,200

#### 4.4 Roadway Capacity

Roadway capacity is a measure of the maximum sustained vehicular flow possible during a given time period, and is a primary factor in determining the operational efficiency of a transportation system. Some common factors that determine roadway capacity are number of lanes, lane width, provision of turning lanes, on-street parking, traffic signal operations, and vertical grades.

The typical measure of roadway capacity is the level of traffic volume versus the total capacity of the facility or V/C ratio. A V/C ratio equal to 1.0 or greater indicates that the demand volume exceeds the available capacity of the roadway. A V/C ratio between 0.76 and 1.0 is indicative of a roadway operating with heavy congestion, whereas a V/C between 0.5 and 0.75 indicates minor or no congestion. V/C ratios can be used to identify areas where traffic mitigation measures should be considered. Existing roadways in the study area with high volume to capacity ratios are shown in Table 2. Additional information on the V/C ratios is included in the Travel Demand Study in the Appendix.

**Table 2: Study Area Roadways with High Volume to Capacity Ratios**

<b>Roadway</b>	<b>Location</b>	<b>2003 V/C</b>
6 <sup>th</sup> Street	North of I-72	>1.0
Route 4	North of I-72	>1.0
Chatham Road	North of I-72	>1.0
Wabash Ave	East of Route 4	0.95
Route 4	North of CR 40	0.85
I-55/I-72	East of I-55	0.80

## 5.0 FUTURE TRANSPORTATION NETWORK (2030)

### 5.1 Land Use

Expanded development south and west of Springfield has resulted in increased congestion on many of the area roadways. In response, political and public opinion has emerged in support of changes to the existing transportation network. As a fundamental part of the comprehensive plan, the proposed roadway network should work in conjunction with the land use plan.

Future travel demand is determined by future land use and demographic characteristics. Land use forecasts for this project were determined using historical growth rates and the future land use map for the Springfield Area. During August 2004, the study team met with representatives of the SSCRPC and developed the 2030 Land Use scenario for further use in the study. Although one cannot precisely predict exactly where and how much of any one type of development will actually occur, this methodology can be used as a reasonable approach to develop land use forecasts for corridor planning studies.

The process of forecasting 2030 conditions included obtaining historical population data for the Springfield Area Townships, the Chatham area, and Sangamon County from SSCRPC. This data was used to estimate that the combined population of the Springfield and Chatham area grew by about 5% between 1990 and 2000. SSCRPC provided “most likely” estimates of growth by the year 2030 in the context of the current Springfield Comprehensive Plan. These growth estimates were reviewed and refined during discussions with representatives of the TAC in September/October 2004. In addition, a growth rate of 5% every 10 years was agreed upon in order to develop future population and employment projections.

The demographic projections for the Springfield/Chatham Planning Area are shown in Table 3. Based on this data, a total growth of 9,470 households and 14,515 employees was projected for the period 2003-2030.

**Table 3: Demographic Characteristics and Projections for the Springfield/Chatham Planning Area**

	<b>Population</b>	<b>Households</b>	<b>Employment</b>
2000	159,800	68,000	106,700
2003	162,740	69,250	109,000
2010	167,790	71,400	112,035
2020	176,180	74,970	117,635
2030	184,990	78,720	123,515
2000-2030 growth	25,190	10,720	16,815
2003-2030 growth	22,255	9,470	14,515

The 2030 projections are included in **Exhibits 7 and 8** of this report. Further information on the land use forecasts is included in the Technical Memorandum – 2030 Land Use Forecast Summary (October 1, 2004) in the Appendix.

## **5.2 Travel Demand Model**

During the course of this study it was determined that a traffic model was essential to adequately evaluate the impacts of future growth on the study area’s existing transportation network. A traffic model for the entire Springfield urbanized area had been developed in the early 1990’s but had become obsolete. Therefore, the task of updating the traffic model was incorporated into this study.

Since this study’s resources were limited, the traffic model update was limited to the region south of Iles Avenue. The travel demand model study area is depicted on Exhibit 12. The model was first updated to 2003 conditions and a partial calibration was conducted so that the

model could be used to identify the impacts of several arterial extensions in the South Growth Area.

The previous regional model was converted from TRANPLAN to the Cube/Voyager platform and the 2003 land use and traffic count information was then entered in the model, followed by model calibration and validation. The 2030 future land use projections along with the committed roadway network was used to develop the 2030 No Build Model forecasts. This was followed by alternatives analysis. The entire process was performed with the assistance of input received through coordination meetings with the Technical Advisory Committee.

### **5.3 No Build Traffic Forecasts & Committed Roadways**

No Build traffic forecasts are generally developed by applying the projected growth factors to the existing roadway network including any known committed roadway improvements. Committed roadway improvements are those assumed to be completed by the local government agencies during the growth period. During the course of the South Growth Study, two projects were designated as committed improvements by the TAC. The two projects are described below and illustrated on **Exhibit 9**.

*Note: Following the completion of the traffic modeling task, the Woodside Road widening from North Lake Road to Veterans Parkway was designated as future (beyond 2030) project #33 in the SATS 2030 Long Range Plan dated March 2005. This may change the results in this study.*

#### MacArthur Blvd. Extension from Stanford Avenue to I-72

Currently, MacArthur Boulevard's southern terminus is Stanford Avenue. The committed improvement extends MacArthur south to I-72 (with an interchange with I-72) as a 4/5-lane major arterial. Recreation Drive connects to the extension south of I-72 at its terminus. In the 2030 No-Build scenario, it is anticipated to carry about 18,000 vpd (with a V/C of about 0.55) as a minor arterial versus about 25,000 vpd (with a V/C of about 0.75) when functioning as a major arterial. According to the SATS 2030 Long Range Plan, this section of MacArthur Blvd. is expected to function as a major arterial.

#### Woodside Road Widening

Currently, Woodside Road is a 2-lane minor arterial roadway. The committed improvement widens the existing roadway to 4/5 lanes from South 2<sup>nd</sup> Street to Veterans Parkway. In the 2030 No-Build Scenario, this roadway is anticipated to carry about 16,500 vpd with a V/C of about 0.6. Compared to the base year (2003), the V/C ratio remains roughly the same although the volumes increase by about 8,000 vpd.

### **5.4 2030 No Build Note-Worthy Capacity Deficiencies**

The 2030 travel demand model was used to identify roadways that are anticipated to experience capacity deficiencies if no improvements beyond those committed are completed (shown in **Exhibit 10**). Identification of these roadways and other factors forms the basis for alternatives development and evaluation in order to mitigate these deficiencies. The traffic forecasts and the V/C ratios are discussed below for the roadways that are expected to experience the greatest levels of congestion.

IL Route 4 (Veterans Parkway)

Currently, IL Route 4 carries about 30,000-35,000 vpd between Wabash and I-72, 18,000-20,000 vpd between I-72 and Mansion Road and 15,000-18,000 vpd between Mansion Road and CH 40 (Main St.-Chatham), (V/C range of 0.6-1.2). In the 2030 model, IL Route 4 is expected to carry about 40,000-45,000 vpd between Wabash Ave and I-72, 32,000-40,000 between I-72 and Mansion Road and 20,000-30,000 vpd between Mansion Road and CH 40. It is expected to experience capacity deficiencies and considerable congestion with V/C of about 1.0-1.2 South of I-72 and V/C as high as 1.4 north of I-72.

I-55/I-72

Currently, I-55/I-72 east of Business 55 (6<sup>th</sup> St.) carries about 46,000 vpd with V/C of about 0.8. It is expected to carry about 67,000-69,000 vpd in 2030 and experience capacity deficiencies with V/C of about 1.2. Most of the additional traffic is through traffic along I-55 and I-72, which are assumed to grow by about 38% between 2003 and 2030.

Chatham Road

Currently, Chatham Road north of I-72 carries about 13,000-23,000 vpd with V/C between 1.0-1.2. It is expected to carry about 17,000-27,000 vpd and experience high V/C of about 1.2-1.4. Residential and commercial employment growth is expected to occur in the vicinity of Chatham Road, which will therefore experience an increase in traffic volumes.

Wabash Avenue

Currently, Wabash Avenue carries 10,000-24,000 vpd west of IL Route 4 (V/C between 0.8-1.1) and 25,000-28,000 vpd (V/C between 0.9-1.0) east of IL Route 4. It is expected to carry about 15,000-28,000 west of Route 4 and 30,000-40,000 east of IL Route 4 and experience capacity deficiencies with V/C of about 1.1-1.3. The traffic volume increase can be attributed to the residential and employment growth that is expected to occur in the vicinity of these segments of Wabash Avenue.

Business 55 (6<sup>th</sup> Street.)

Currently, Business 55 north of I-72 carries 27,000-32,000 vpd (with V/C between 0.8-1.4). In the 2030 model, it is anticipated to carry about 35,000-40,000 vpd and experience capacity deficiencies with V/C as high as 1.8. Business 55 serves as a major gateway into downtown Springfield and is also one of the major crossings of I-72. An increase in external-internal trips along with some commercial growth along the Business 55 corridor will result in an increase in volumes for this roadway.

## 5.5 No Build Model Validation

2030 No Build Model Volumes were compared with historical trends in traffic volumes along with forecasts from other previous studies. The locations where this validation was performed are shown in **Exhibit 11**. The forecasts appear to be reasonable when compared to the



historical trends and the other forecasts. The comparisons are shown in the graphs in the Travel Demand Study in the Appendix.

### 5.6 Alternatives Analysis and Findings

Based on review of the SATS 2030 Long Range Plan and discussions with the Technical Advisory Committee, several roadway improvement projects were identified that could potentially alleviate the deficiencies in the transportation system in the South Growth Area. Effects of each of these improvements were evaluated using the 2030 Springfield travel demand model. To reduce the number of combinations of these alternatives, projects were grouped into five 'scenarios' by ensuring that the improvements in each scenario have effects that are independent of each other. **Table 4** lists the scenarios that were developed initially for analysis. These are also shown in **Exhibit 12**.

**Table 4: Initial Transportation Improvement Alternatives**

Alternative	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E (all)
North MacArthur					
Toronto Rd/Woodside Widening (to IL 4)					
IL 4 widen 6 lanes (Woodside/Monroe)					
Wabash widen 5 lanes (Veterans/I-72)				△ △ △	
South MacArthur to Woodside Road					
Iron Bridge widening (Woodside/Walnut)					
6 <sup>th</sup> Street widen 6 lanes (Stevenson/I-72)					
Panther Creek/Southwind Connection			△ △ △		
North Lake / Concetta Connection			○ ○ ○		
Prairie Crossing to MacArthur		△ △ △			
11 <sup>th</sup> Street Extensions					
University Extension					
Lincolnshire/Hazel Dell Connection	△ △ △				
Stanford Extension					
Bradforton/Broadbush Connection					
Mathers Road Extension		△ △ △			
Hollis Extension			○ ○ ○		
Mercantile Extension			○ ○ ○		
Mt. Zion School Road Extension			△ △ △		
Plummer Extension					
Pullium Extension					
I-55 widen to 6-lanes (6 <sup>th</sup> St./Clear Lake)					



△ △ △ east/west routes in north study area

north/south (arterial) versus east/west (I-55) routes between Chatham and Springfield

with and without University, Stanford, and 11<sup>th</sup> Street extensions

○ ○ ○ with and without North Lake/Concetta connection and Hollis and Mercantile extensions

Alternatives analysis using the 2030 Travel Demand Model for the several scenarios developed is discussed below.

### **Scenario A**

This scenario of improvements includes the widening of I-55/72 and 6<sup>th</sup> Street to 6 lanes, the extension of Pullium Road from I-55 to CH 18 west of IL Route 4, and the Lincolnshire connection to Hazel Dell Road.

Major impacts of Scenario A on the existing transportation system include the widening of I-55/72 and 6<sup>th</sup> Street. They will both draw additional traffic resulting in continued capacity problems and provide very little relief to IL Route 4 which continues to serve as the primary route for the Springfield-Chatham traffic.

Significant impacts include the Pullium Road extension which diverts some traffic from East Walnut St./Chatham Road (CH 40) and the Lincolnshire extension to Hazel Dell which diverts about 40-50% of the traffic off 6<sup>th</sup> Street Frontage Road/Recreational Drive.

### **Scenario B**

This scenario includes the Bradfordton extension north and south of Wabash, Broadus connection to IL Route 4, Plummer extension to Broadus, Mathers Road extension to Bradfordton, 11<sup>th</sup> Street extensions, Stanford Avenue east extension, University Drive extension, and the Prairie Crossing extension to MacArthur.

Major impacts of Scenario B on the existing network include the 11<sup>th</sup> Street extension to Stevenson, which provides relief to 6<sup>th</sup> St. north of I-72, the MacArthur extension north of I-72, and South 2nd St. (10-15% from each). The Stanford Ave. extension diverts about 30% of the traffic from Ash St. to the north.

Significant impacts include the Bradfordton extension, which diverts about 5% of the traffic from IL Route 4 and the Mathers Road extension which will provide some relief to Cockrell Lane and the MacArthur extension north of I-72.

The Broadus connection, the Plummer extension, and the University Drive west extension all have minor impacts on the existing network.

The 11<sup>th</sup> Street south extension from Toronto Road was found to be an improvement with negligible capacity impacts although it reduces travel time between South 11<sup>th</sup> Street and West Lake Shore Drive.

### **Scenario C**

This scenario of improvements includes the MacArthur extension south of I-72, Iron Bridge widening, Panther Creek/Southwind connection, Mt. Zion School Road extension, Hollis extension to Mercantile, and Mercantile Drive extension.

Major impacts of Scenario C on the existing system include the MacArthur extension south of I-72 to Woodside Rd. which diverts about 10% of traffic from IL Route 4 and about 25% from South 2<sup>nd</sup> St. If Iron Bridge Road is widened to 4 lanes, it is expected to

carry an additional 3,000-4,500 vpd (total 14,000-15,000 vpd) and 4 lanes are then justified. However, widening of Iron Bridge Road alone has negligible impact on IL Route 4. The South MacArthur extension along with widening of Iron Bridge Road causes a reduction in volumes on I-55 by about 10% South of I-72 and a reduction in volumes on 2nd St. by about 12%.

Significant impacts result from the Panther Creek/Southwind connection which is expected to carry about 4,000 vpd west of the MacArthur extension (this can be attributed to the residential growth expected to occur there) and only about 1,000 vpd east of the extension. Both the Hollis and Mercantile improvements results in significant impacts. The Hollis extension provides some relief to Wabash Ave. and the Mercantile extension is expected draw about 25% of the traffic from Cockrell Lane.

*Note: Following completion of the traffic modeling task, the SATS 2030 Long Range Plan was published. The final document calls for Cockrell Lane to be closed at I-72 (LRP#17) upon completion of the Mercantile/Cockrell connection (LRP#52). This may change the results in this study.*

The Mt. Zion School Rd. extension to Curran Road (CH 18) and the North Lake Road extension to Concetta were found to be improvements with negligible impacts.

#### **Scenario D**

This scenario includes IL Route 4 (Veterans Parkway) widening from Monroe south to Woodside Rd., and the Wabash Avenue widening from west of Koke Mill Rd. to I-72.

Both the widening of IL Route 4 and Wabash Ave. are considered as improvements with major impacts. When IL Route 4 is widened from 4 to 6 lanes, it carries an additional 3,000-5,000 vpd south of I-72 and 8,000-12,000 vpd north of I-72, exacerbating capacity problems south of the project. It draws traffic from MacArthur Blvd. north of I-72, I-55 south of I-72 and Cockrell Lane. Wabash Ave. carries an additional 5,000-6,000 vpd west of IL Route 4 and does not provide relief to any other facility.

The 2030 projected traffic volumes for key roadways in each scenario as compared to the 2003 existing traffic and the 2030 No-Build traffic is shown in **Exhibit 13**.

### **5.7 SATS 2030 Long Range Plan**

Coordination between this study and other transportation studies covering the same general area is an important factor in the studies outcome. The findings in this study were closely coordinated with the SSCRPC during the preparation of the SATS 2030 Long Range Transportation Plan (dated March 2005).

The SATS Long Range Transportation Plan is a guideline for analysis of existing and proposed transportation systems, and the planning of future development of urbanized areas including Springfield and many of the adjacent communities. Revisions to the long range plan are continually necessary due to funding issues, public involvement, and changing travel patterns. The proposed roadway network for the South Growth Study Area incorporates many of the same projects recommended in the long range plan.

Proposed projects identified in the SATS 2030 Long Range Plan are summarized in the Section 6.0 with the results of South Growth Study Area for projects in the proposed roadway network. It should be noted that the Woodside Road widening project was considered as a

committed project for all scenarios in the traffic model, whereas, in the Long Range Plan, the project is regarded as a future project to be completed after 2030.

### 5.8 Chatham Transportation Planning Study

The Village of Chatham has initiated a transportation study which overlaps the South Growth Study area. Review and ongoing coordination with the Village of Chatham will allow their study to build on the efforts and results in the South Growth Study.

## 6.0 SUMMARY OF IMPROVEMENTS

One of the primary objectives of this study is to provide planning assistance for development of a future roadway network that provides for the following: reduction in traffic congestion, increase in travel choices, and supports land development that is consistent with the Springfield Comprehensive Plan. The end product should also be supported by and beneficial to all intergovernmental stakeholders.

Projects identified in the scenarios to have negligible impact on the existing roadway network were eliminated from further consideration; the rest of the improvements were included in the recommended network. The final roadway improvement plan is shown in **Exhibit 14**. The V/C ratios for recommended network are shown in **Exhibit 15**.

It can be seen that capacity deficiencies still prevail under the recommended network plan, especially on IL Route 4 through Chatham and north of Chatham as well as on Wabash Ave. east of IL Route 4 and 6<sup>th</sup> Street north of I-72.

The following is a summary of the recommended improvements together with the SATS 2030 Long Range Project Number, see **Exhibit 16**. The projects are grouped by jurisdiction. Construction costs shown are taken from the SATS Long Range Transportation Plan (2004 dollars).

### 6.1 Sangamon County Projects

#### MacArthur Extension South of I-72

Long Range Project No. 47 & 78 (2005-2030)

Jurisdiction: Sangamon County

Functional Class: Minor Arterial (South of I-72)

Traffic Volumes:

2003:	N/A
2030 (No Build):	N/A
2030 (Build):	14,500-20,000 ADT

Proposed improvement: Construct new 2.5 mile 4-lane highway section (I-72 to Woodside Road), two grade separation structures at Woodside Road and Iron Bridge Road over UP railroad.

Features, impacts and key issues:

- Provides relief to I-55 south of I-72, traffic volumes decrease by 10%
- Reduces traffic volumes on 2<sup>nd</sup> St. by 12%
- 2 new structures

Construction Cost (2004\$): \$18.5 Million



**Mathers Road from Veterans Parkway to Mercantile Drive**

Long Range Project No. 48 (2005-2030)

Jurisdiction: Sangamon County

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 5,500 ADT

Proposed improvement: Construct 1.1 mile 2-lane highway section

Features, impacts and key issues:

- Provides some congestion relief to Cockrell Lane and North MacArthur ext.
- Funding from private developers

Construction Cost (2004\$): \$1.457 Million

**Bradfordton Road Extension South of Wabash Ave.**

Long Range Project No. 6 (Beyond 2030)

Jurisdiction: Sangamon County

Functional Class: Minor Arterial

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 2,500-4,000 ADT (South of I-72)

Proposed improvement: New construction, 2.25 miles 5-lane rural highway section  
(Wabash Ave. to Spaulding-Orchard Rd.)

Features, impacts and key issues:

- Extension of a North-South arterial route
- Provides congestion relief to Veterans Parkway (IL Route 4)
- 2 new structures
- New ROW acquisitions for entire section
- No displacements anticipated

Construction Cost (2004\$): \$10 Million

**Bradfordton/Broadus Connection to IL Route 4**

Long Range Project No. 7 & 8 (Beyond 2030)

Jurisdiction: Sangamon County

Functional Class: Minor Arterial

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 2,500-4,000 ADT (South of I-72)

Proposed improvement: New construction, 6 miles 3-lane rural highway section

Features, impacts and key issues:

- Extension of a North-South arterial route
- Provides congestion relief to Veterans Parkway (IL Route 4)
- 1 new structure

Construction Cost (2004\$): \$9 Million

**Iron Bridge Road, from Woodside Road to Walnut Street in Chatham**

Long Range Project No. 16 (Beyond 2030)

Jurisdiction: Sangamon County

Functional Class: Minor Arterial

Traffic Volumes:

2003: 4,100-4,650 ADT

2030 (No Build): 8,500-11,000 ADT

2030 (Build): 12,000-14,000 ADT

Proposed improvement: 3 mile re-construction, add 2 lanes

Features, impacts and key issues:

- Additional 3,000-4,500 vpd
- Widening of Iron Bridge Road has negligible impact on IL Route 4
- Along with South MacArthur Extension reduces volumes on I-55 about 10% South of I-72 and about 12% on 2nd St.

Construction Cost (2004\$): \$3 Million

**Mathers Road from Mercantile Drive to Bradfordton Road Extension**

Long Range Project No. 17 (Beyond 2030)

Jurisdiction: Sangamon County

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 500-1,500 ADT

Proposed improvement: Construct 0.75 mile 2-lane highway section

Features, impacts and key issues:

- Provides some congestion relief to Cockrell Lane and North MacArthur extension
- Funding from private developers

Construction Cost (2004\$): \$0.843 Million

**Woodside Road widening North Lake Road to Veterans Parkway**

Long Range Project No. 33 (Beyond 2030)

Jurisdiction: Sangamon County

Functional Class: Minor Arterial

Traffic Volumes:

2003: 8,500 ADT

2030 (No Build): 16,500 ADT

2030 (Build): 14,250-18,000 ADT

Proposed improvement: Re-construct 2 miles existing 2-lane highway section and add 3 lanes

Features, impacts and key issues:

- V/C ratio remains roughly the same although the volumes increase by about 8,000 vpd

Construction Cost (2004\$): \$4 Million

## 6.2 Springfield Projects

### **11<sup>th</sup> Street Extension - Stevenson to Hazel Dell.**

Long Range Project No. 4 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Minor Arterial

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 13,000-17,000 ADT

Proposed improvement: New Construction, 1 mile 4-lane urban roadway section

Features, impacts and key issues:

- Extension of a North-South urban arterial to complete connection from Toronto Road to
- Provides congestion relief to 6<sup>th</sup> St. north of I-72, MacArthur extension north of I-72, and South 2nd St. (traffic volumes decrease 10-15%)

Construction Cost (2004\$): \$3.75 Million

### **Bradfordton Road Extension North of Wabash Ave.**

Long Range Project No. 10 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Minor Arterial

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 7,000-10,000 ADT

Proposed improvement: New Construction, 2 mile 5-lane highway section (Wabash to Old Jacksonville Road)

Features, impacts and key issues:

- Extension of a North-South arterial to complete connection from IL Route 97 to Wabash Ave (IL Route 54)
- Existing Bradfordton Road terminates at Old Jacksonville Road
- Provides congestion relief to Veterans Parkway (IL Route 4), traffic volumes decrease by 5%
- No proposed structures
- No displacements necessary
- Substantial funding by private developers

Construction Cost (2004\$): \$4 Million

### **Cockrell Lane from Hollis Drive to Mathers Road**

Long Range Project No. 17 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: 3,700-5,700 ADT

2030 (No Build): 9,000-11,500 ADT

2030 (Build): 6,200-11,000 ADT

Proposed improvement: Reconstruction, 1 mile 2-lane rural township roadway, with cul-de-sacs north and south of I-72.

Features, impacts and key issues:

- Improvements and/or additional routes such as widening IL Route 4 from 4 to 6 lanes and the construction of Mercantile Drive would reduce traffic volumes on existing Cockrell Lane.
- 1 new structure

Construction Cost (2004\$): \$6 Million

#### **Hollis Drive Extension East of Cockrell Lane to Mercantile Drive**

Long Range Project No. 30 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 6,200 ADT

Proposed improvement: Relocation and reconstruction, 0.28 mile 2-lane urban roadway section, add 1 lane

Features, impacts and key issues:

- Provides some congestion relief to Wabash Ave. (IL Route 54)
- No proposed structures
- Potential commercial displacements
- Partial funding by State, construction done in conjunction with Wabash improvements (Project No.74)

Construction Cost (2004\$): \$0.6 Million

#### **Lincolnshire Blvd. from Freedom Drive to 11<sup>th</sup> Street**

Long Range Project No. 44 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Minor Arterial

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 2,000-10,000 ADT

Proposed improvement: Construct 3.2 miles of new 2-lane urban roadway section

Features, impacts and key issues:

- Diverts about 40-50% of traffic off 6<sup>th</sup> St. Frontage Road/Recreational Dr.
- Connection expected to carry about 10% more traffic with 4-lane scenario
- Partial funding from private developers
- 1 new structure

Construction Cost (2004\$): \$10 Million

#### **MacArthur Extension North of I-72**

Long Range Project No. 46 (2005-2030)

Jurisdiction: City of Springfield/State of Illinois

Functional Class: Major Arterial (North of I-72)



## Traffic Volumes:

2003: N/A  
 2030 (No Build): 18,000-25,000 ADT  
 2030 (Build): 20,000-30,000 ADT

Proposed improvement: Construct new 1.5 mile 4-lane highway section  
 (Wabash/MacArthur/Stanford intersection to Recreation Drive)

## Features, impacts and key issues:

- New interchange at I-72
- Provides relief to I-55 south of I-72, traffic volumes decrease by 10%
- Reduces traffic volumes on 2<sup>nd</sup> St. by 12%

Construction Cost (2004\$): \$37 Million

**Mercantile Drive from Wabash Ave. to Spaulding-Orchard Road**

Long Range Project No. 52 (2005-2030)

Jurisdiction: City of Springfield /State of Illinois

Functional Class: Collector

## Traffic Volumes:

2003: N/A  
 2030 (No Build): N/A  
 2030 (Build): 600-2,000 ADT

Proposed improvement: Construct new 2.5 mile 4-lane highway section

## Features, impacts and key issues:

- Reduces traffic volumes on Cockrell Lane by 25%
- 2 new structures (over railroad and I-72)
- Partial funding from private developers

Construction Cost (2004\$): \$16.4 Million

**Panther Creek/Mt. Zion Road Connector from Foxhall Road to Cockrell/Mercantile**

Long Range Project No. 58 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

## Traffic Volumes:

2003: N/A  
 2030 (No Build): N/A  
 2030 (Build): 1,500-2,000 ADT

Proposed improvement: Construct new 0.5 mile 2-lane highway section

## Features, impacts and key issues:

- Extension does not provide significant relief to surrounding roadway network
- Funding from private developers

Construction Cost (2004\$): \$0.53 Million

**Prairie Crossing Extension from Schooner Drive to MacArthur Extension**

Long Range Project No. 63 & 64 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

## Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 500-4,000 ADT

Proposed improvement: Construct new 1.1 mile 4-lane highway section

Features, impacts and key issues:

- Reduce traffic on Woodside Road by approx. 10-15%
- Funding from private developers

Construction Cost (2004\$): \$2.52 Million

#### **Panther Creek/Southwind Extension**

Long Range Project No. 70 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 1,000-4,000 ADT

Proposed improvement: Construct new 2.3 mile 2-lane highway section

Features, impacts and key issues:

- Extension does not provide significant relief to surrounding roadway network
- 1 new structure
- Funding from private developers

Construction Cost (2004\$): \$2.958 Million

#### **Stanford Ave. East Extension**

Long Range Project No. 71 (2005-2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 6,000-8,000 ADT

Proposed improvement: Construct new 1 mile 4-lane urban roadway section from Fox  
Bridge Road to Dirksen Parkway

Features, impacts and key issues:

- Reduces traffic volumes on Ash St. by approx. 30%

Construction Cost (2004\$): \$3.8 Million

#### **Mt. Zion School Road Extension from Mercantile Drive to Bradfordton Road Extension**

Long Range Project No. 20 (Beyond 2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 1,500 ADT

Proposed improvement: Construct 0.75 mile 2-lane highway section

Features, impacts and key issues:

- Extension does not provide significant relief to any surrounding facilities

Construction Cost (2004\$): \$2.83 Million

### **University Drive Extension from Cotton Hill to 11<sup>th</sup> Street**

Long Range Project No. 32 (Beyond 2030)

Jurisdiction: City of Springfield

Functional Class: Collector

Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 3,500 ADT

Proposed improvement: Construct 0.5 mile 2-lane urban roadway section

Features, impacts and key issues:

- Extension divert University traffic from Toronto Road off 11<sup>th</sup> Street

Construction Cost (2004\$): \$0.912 Million

### **KCS/UP railroad relocation to the N & S railroad east of Curran**

Long Range Project No. 34 (Beyond 2030)

Jurisdiction: City of Springfield

Functional Class: N/A

Traffic Volumes: N/A

Proposed improvement: Relocate 1.1 mile of existing KCS railroad to the existing N & S railroad just east of the abandoned railroad east of Curran

Features, impacts and key issues:

- Relocating KCS railroad eliminates the need for replacement of the existing deficient UP railroad bridge over Cockrell Lane
- Allows for extension of Mathers Road
- Removal of existing UP bridge over I-72, allow interstate to be raised and reduce flooding potential at this location

Construction Cost (2004\$): \$4.5 Million

## **6.3 IDOT Projects**

### **I-55/72 and Bus. 55 (6<sup>th</sup> St.) widening to 6 lanes**

Long Range Project No. 31 & 32 (2005-2030)

Jurisdiction: State of Illinois

Functional Class: Freeway

Traffic Volumes:

2003: 34,200-47,500 ADT

2030 (No Build): 50,300-67,000 ADT

2030 (Build): 51,400-72,900 ADT

Proposed improvement: Reconstruct I-72 from 2<sup>nd</sup> St. to 1 mile east of I-55 (1.8 miles) and I-55 from Southwind Rd. to 0.4 mile north of Clear Lake Ave.(7 miles), add 2 lanes with interchange reconstruction

Features, impacts and key issues:

- I-72/55 and 6<sup>th</sup> Street interchange reconstruction
- V/C ratio when compared to the No Build scenario reduced from 1.0 to 0.8.
- New structures at interchange

Construction Cost (2004\$): \$280 Million

## **IL Route 4 (Veterans Pkwy.) widening to 6 lanes**

Long Range Project No. 71 (2005-2030)

Jurisdiction: State of Illinois

Functional Class: Major Arterial

Traffic Volumes:

2003: 19,200-34,000 ADT

2030 (No Build): 33,000-44,000 ADT

2030 (Build): 38,000-52,000 ADT

Proposed improvement: 5 mile re-construction, add 2 lanes from 0.3 mile north of Monroe/Old Jacksonville Rd. to 0.3 mile south of Mathers Rd.

Features, impacts and key issues:

- Carries additional 3,000-5,000 vpd South of I-72 and 8,000-12,000 vpd North of I-72
- Widening to 6 lanes draws additional traffic and parallel roadways do not draw sufficient traffic away from facility
- Continued capacity deficiencies with V/C between 0.7 and 1.0.
- Increased traffic congestion is most significant in areas of heavy commercial development.

Construction Cost (2004\$): \$45 Million

## **Wabash Avenue widening from Koke Mill Road to I-72**

Long Range Project No. 74 (2005-2030)

Jurisdiction: State of Illinois

Functional Class: Major Arterial

Traffic Volumes:

2003: 5,800-11,000 ADT

2030 (No Build): 9,000-16,500 ADT

2030 (Build): 9,000-22,000 ADT

Proposed improvement: 3 mile re-construction, add 3 lanes

Features, impacts and key issues:

- Additional 5,000-6,000 vpd West of Route 4 (18,000-22,000 vpd total)
- Does not provide relief to any other facility
- Terminates at Moffat St. in Curran

Construction Cost (2004\$): \$27.5 Million

## **6.4 Chatham Projects**

### **Plummer Blvd. Extension**

Long Range Project No. 61 (2005-2030)

Jurisdiction: Village of Chatham

Functional Class: Minor Arterial



## Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 1,000-4,500 ADT

Proposed improvement: Construct new 1.5 mile 2-lane highway section from Ptarmigan Drive in Chatham to Bradfordton Road

## Features, impacts and key issues:

- Extension provides some relief to CH 40 and Mansion Road
- Funding from private developers

Construction Cost (2004\$): \$2 Million

**Pulliam Road Extension from IL Route 4 to Gordon Drive**

Long Range Project No. 62 (2005-2030)

Jurisdiction: Village of Chatham

Functional Class: Minor Arterial

## Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 2,000-6,000 ADT

Proposed improvement: Construct new 1.6 mile 2-lane highway section

## Features, impacts and key issues:

- Grade separation structure at railroad crossing
- Extension provides some relief to some relief to East Walnut St/Chatham Rd.
- 1 new structure
- Partial funding from private developers

Construction Cost (2004\$): \$4.4 Million

**Pulliam Road Extension from Gordon Drive to I-55**

Long Range Project No. 25 (Beyond 2030)

Jurisdiction: Village of Chatham

Functional Class: Minor Arterial

## Traffic Volumes:

2003: N/A

2030 (No Build): N/A

2030 (Build): 5,000-7,000 ADT

Proposed improvement: Construct new 2 mile 2-lane highway section

## Features, impacts and key issues:

- 1 new structure over Sugar Creek
- Partial funding from private developers

Construction Cost (2004\$): \$6.6 Million

**EXHIBITS**

Exhibit 1	Census 2000 Urbanized Area
Exhibit 2	South Growth Study Area
Exhibit 3	2003 Households By TAZ
Exhibit 4	2003 Total Employment By TAZ
Exhibit 5	Functional Classification
Exhibit 6	2003 ADT
Exhibit 7	2003-2030 Household Growth
Exhibit 8	2003-2030 Employment Growth
Exhibit 9	Committed Roadway Projects
Exhibit 10	2030 Model Capacity Deficient Roadways
Exhibit 11	2030 No Build Model Validation Points
Exhibit 12	Travel Demand Modeling Scenarios
Exhibit 13	Comparison of Daily Volumes for Alternative Scenarios
Exhibit 14	Roadway Network Plan
Exhibit 15	V/C Ratios for 2030 Recommended Network
Exhibit 16	SATS Long Range Plan

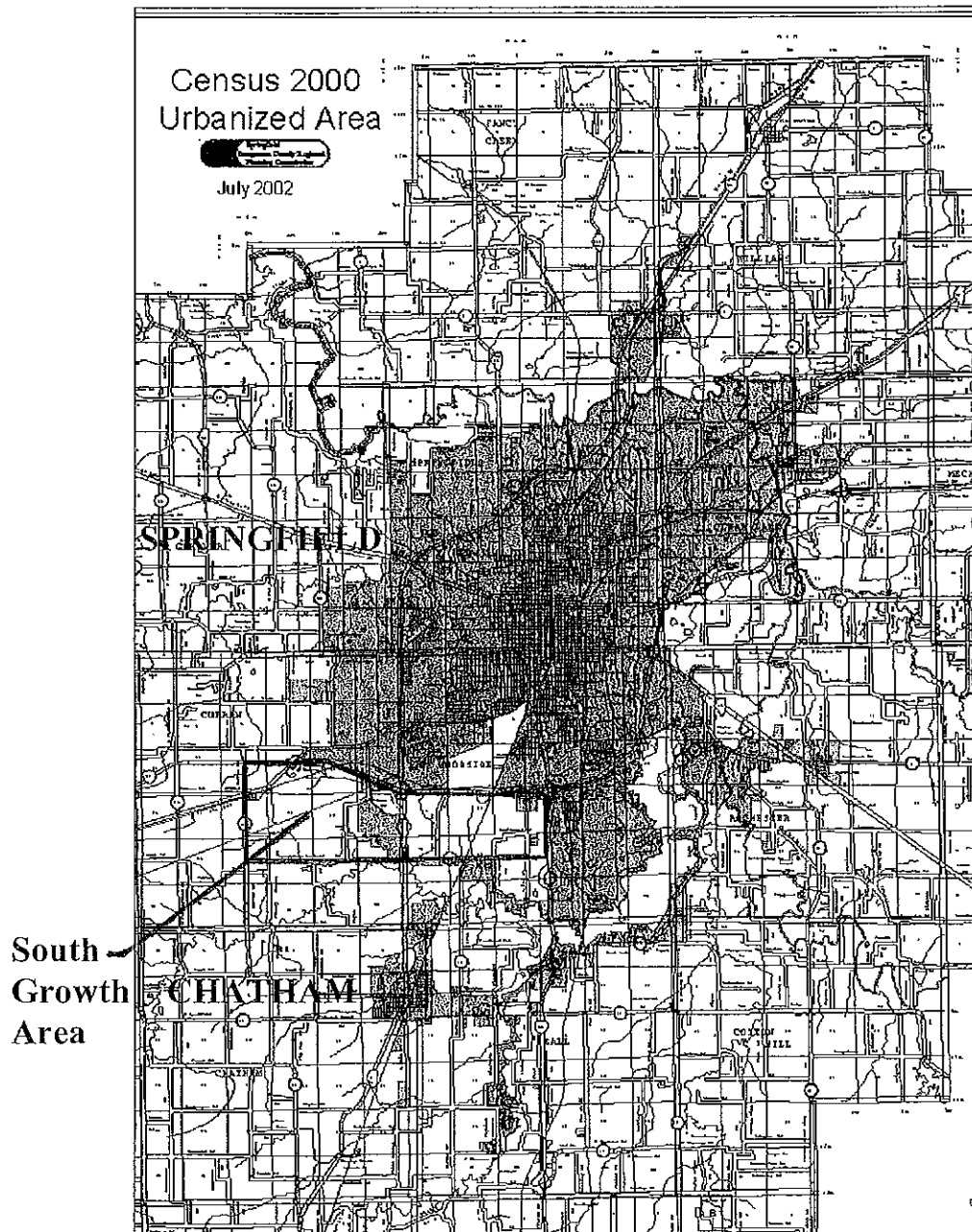


Exhibit 1: Census 2000 Urbanized Area

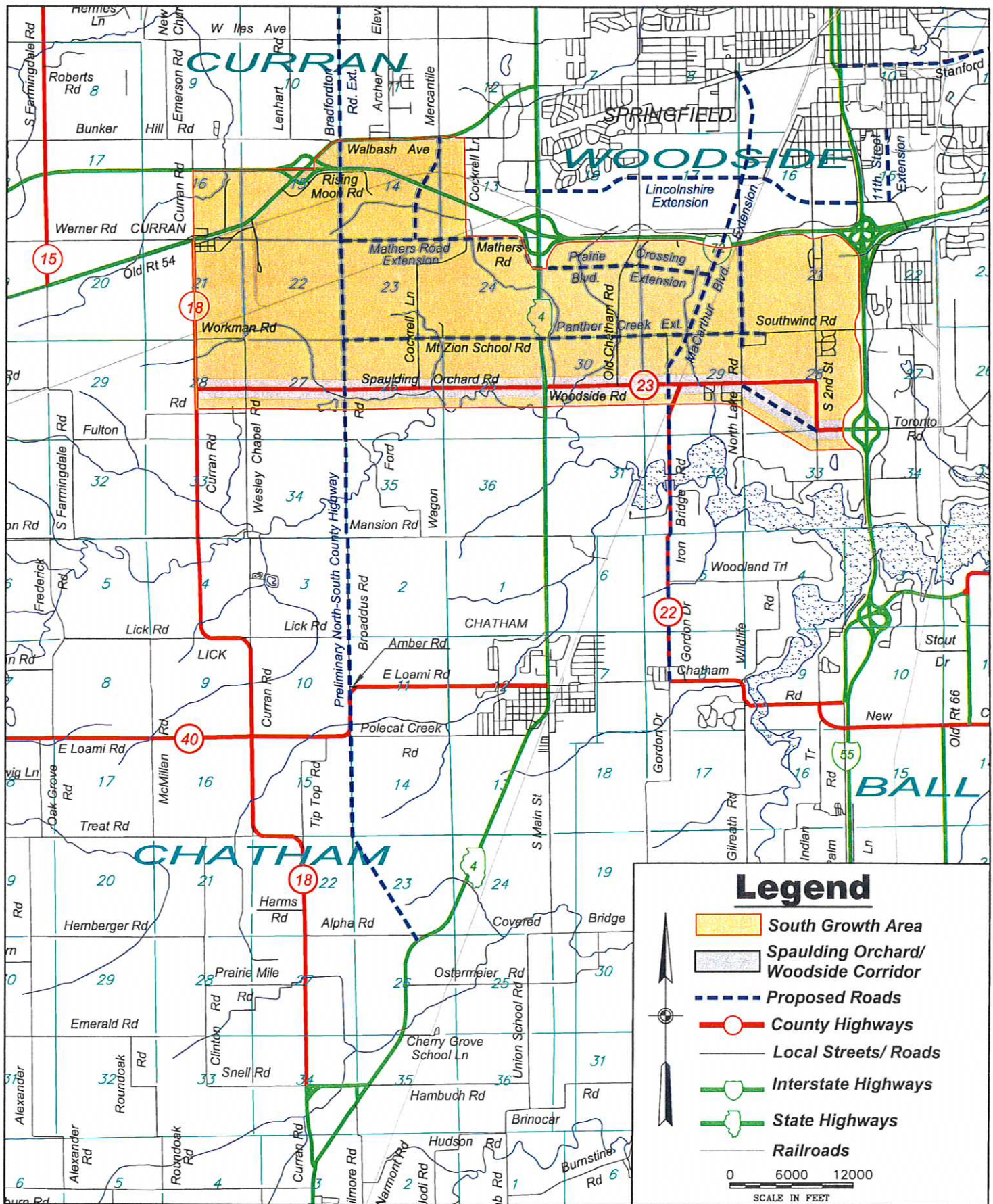


EXHIBIT 2-STUDY AREA MAP

South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Grant Program-Sangamon County



# South Springfield Study Springfield, Illinois

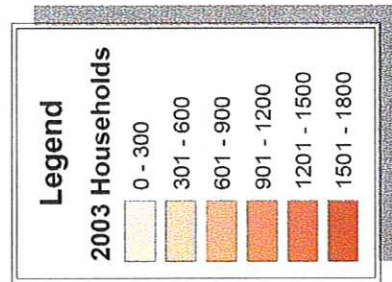
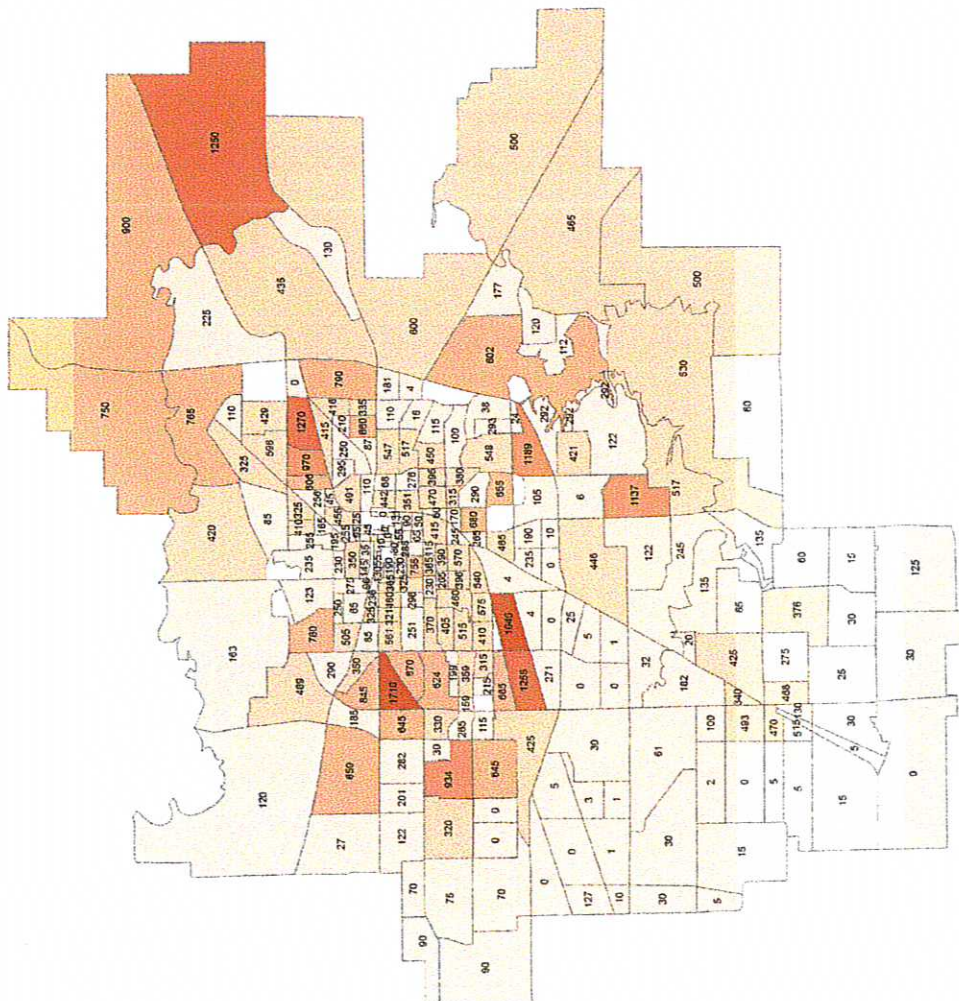


Exhibit 3:  
2003 Households By TAZ

Source:  
2003 Springfield Travel  
Demand Model



# South Springfield Study Springfield, Illinois

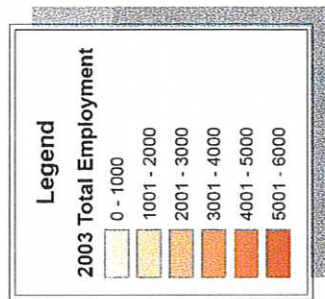
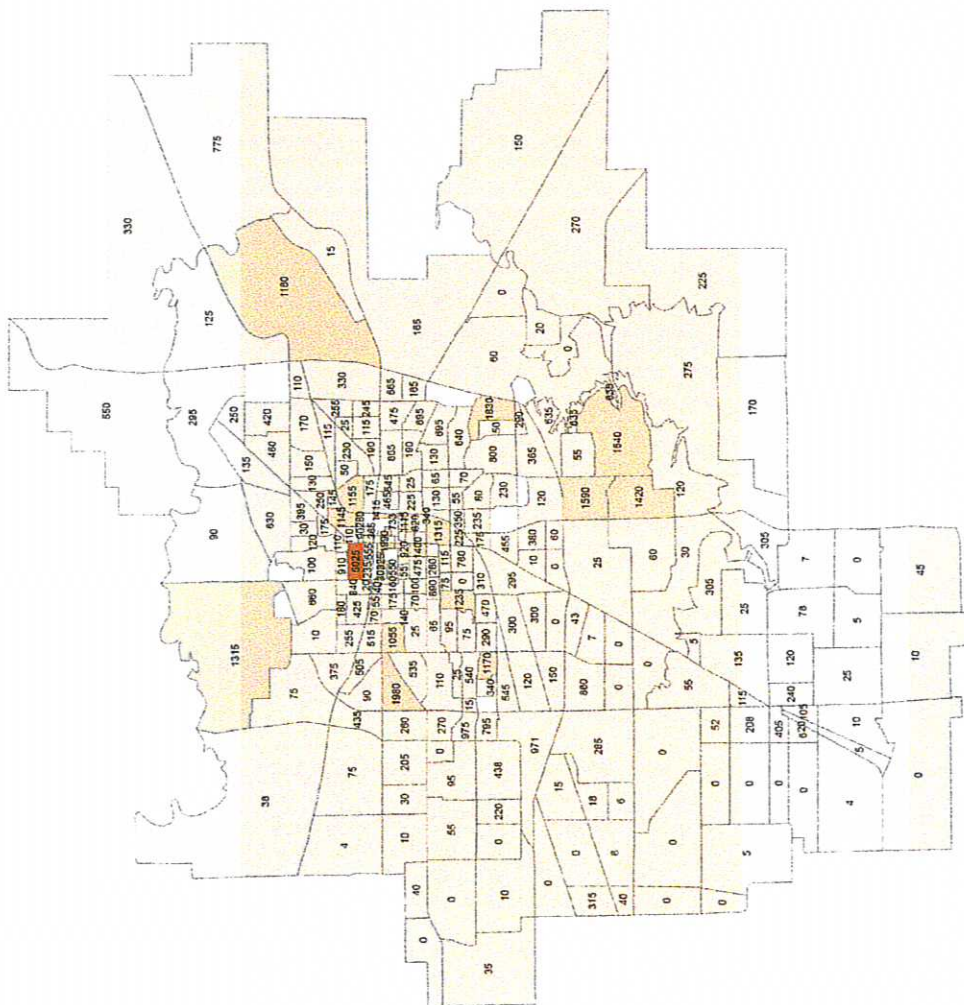


Exhibit 4:  
2003 Total Employment  
By TAZ

Source:  
2003 Springfield Travel  
Demand Model



# South Springfield Study Springfield, Illinois

## Legend

### Functional Classification

- Local Roads
- Minor Collector (Non-Urban)
- Collector (Urban)
- Major Collector (Non-Urban)
- Minor Arterial (Non-Urban)
- Minor Arterial (Urban)
- Other Principal Arterial
- Interstate



## Exhibit 5:

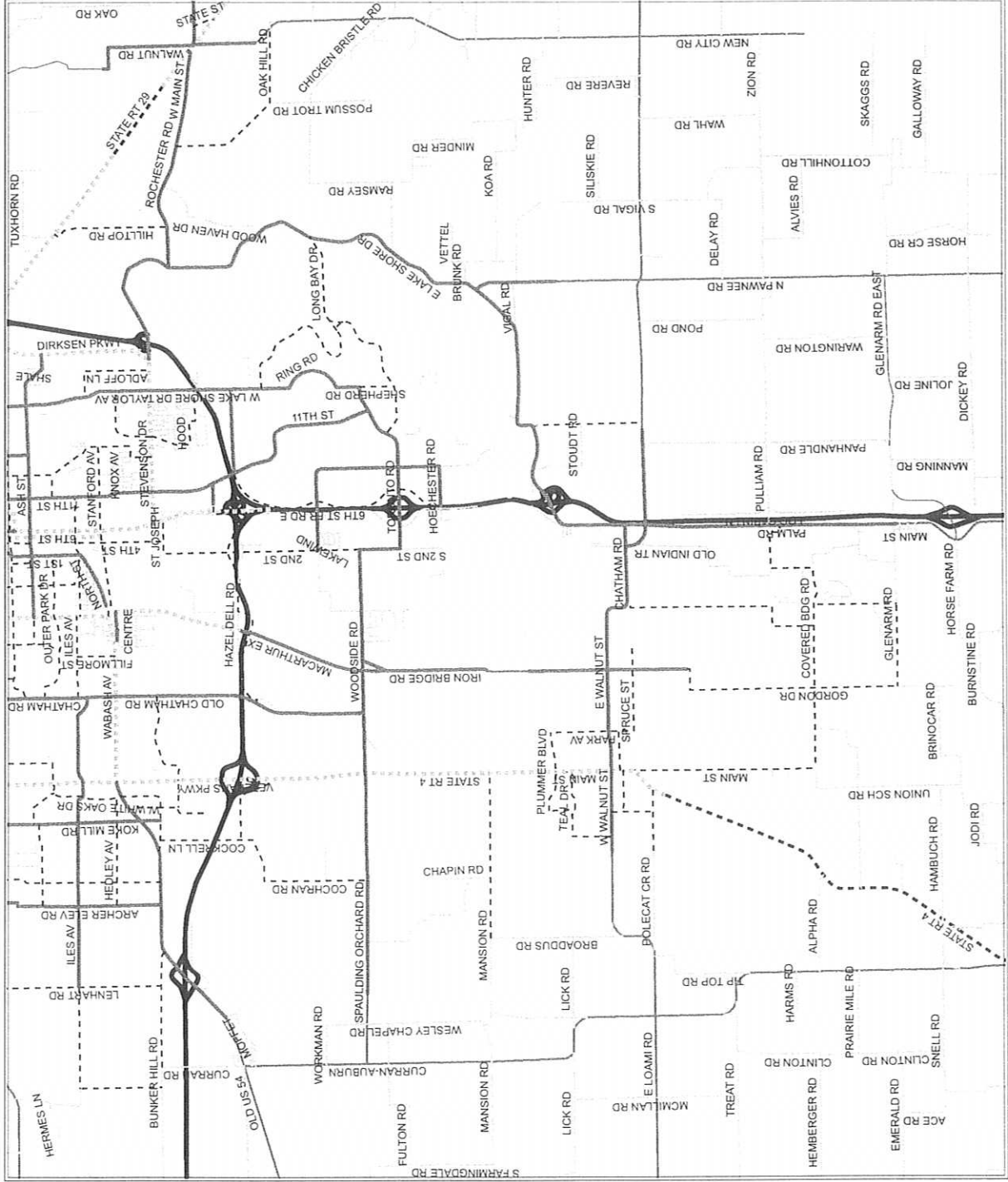
### Functional Classification

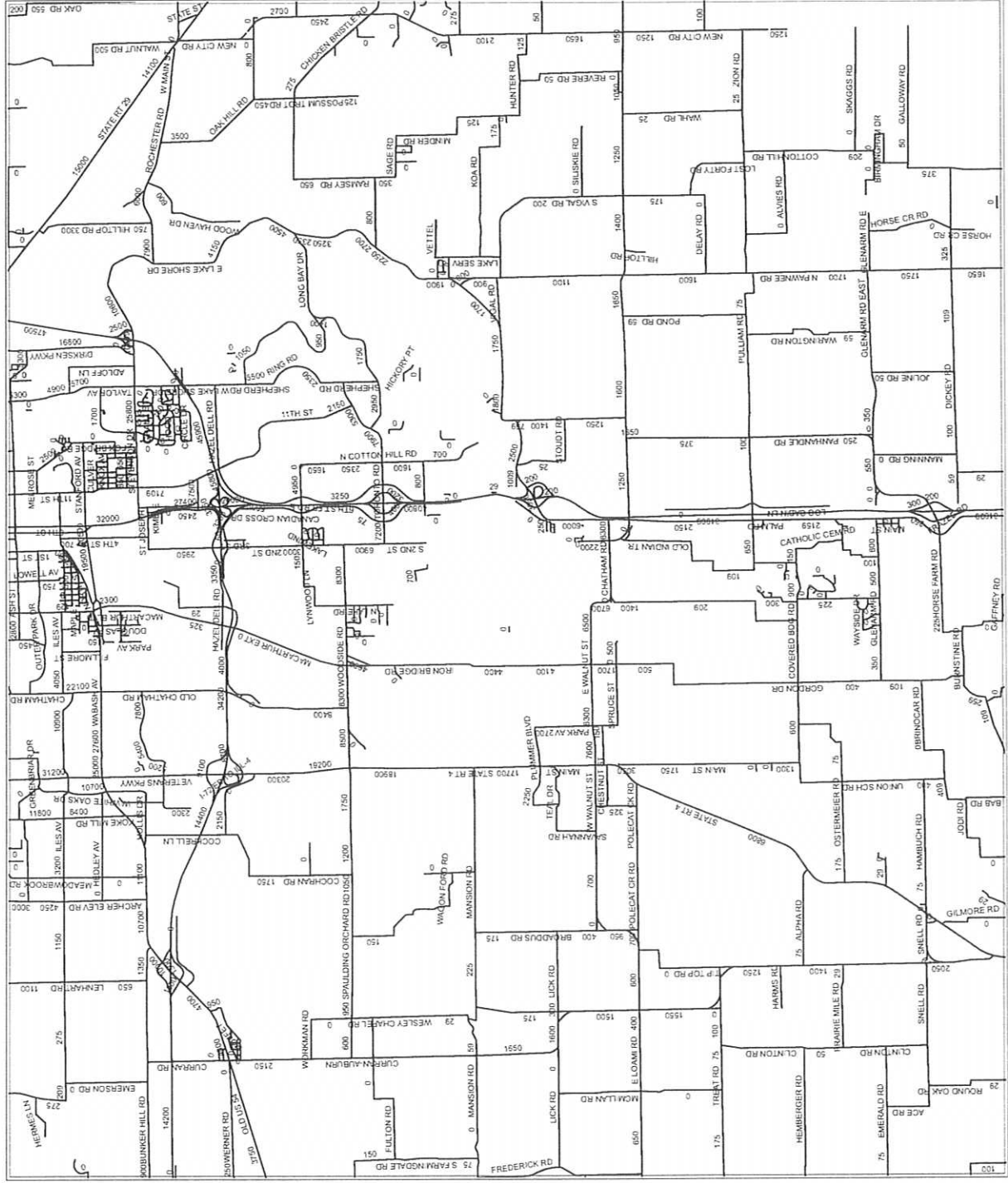
## Source:

IDOT GIS Database

6/01/05  
77-04

**CBB**  
Crawford, Bunte, Brammeier  
Traffic and Transportation Engineers







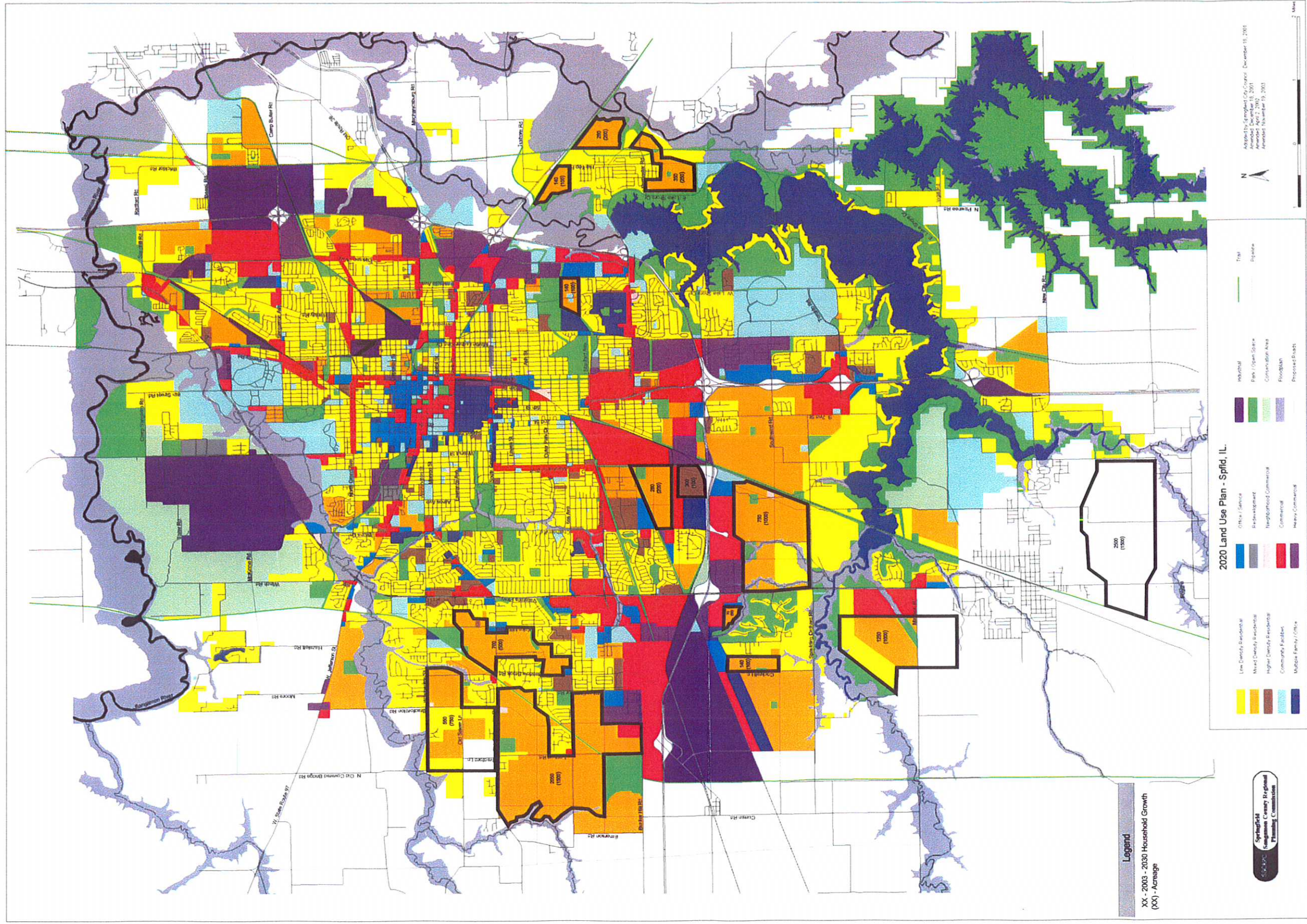


Exhibit 7: 2003-2030 Household Growth



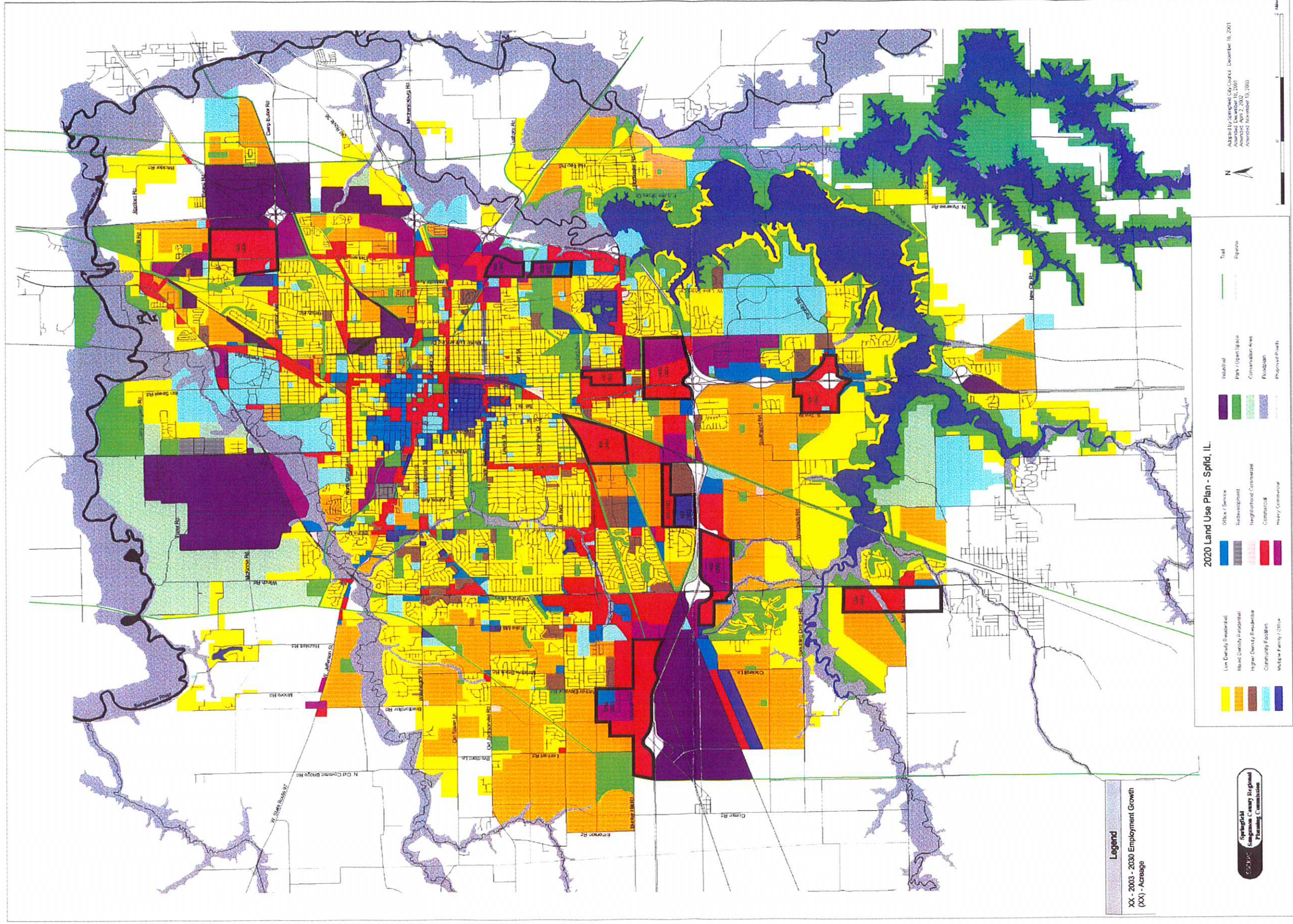
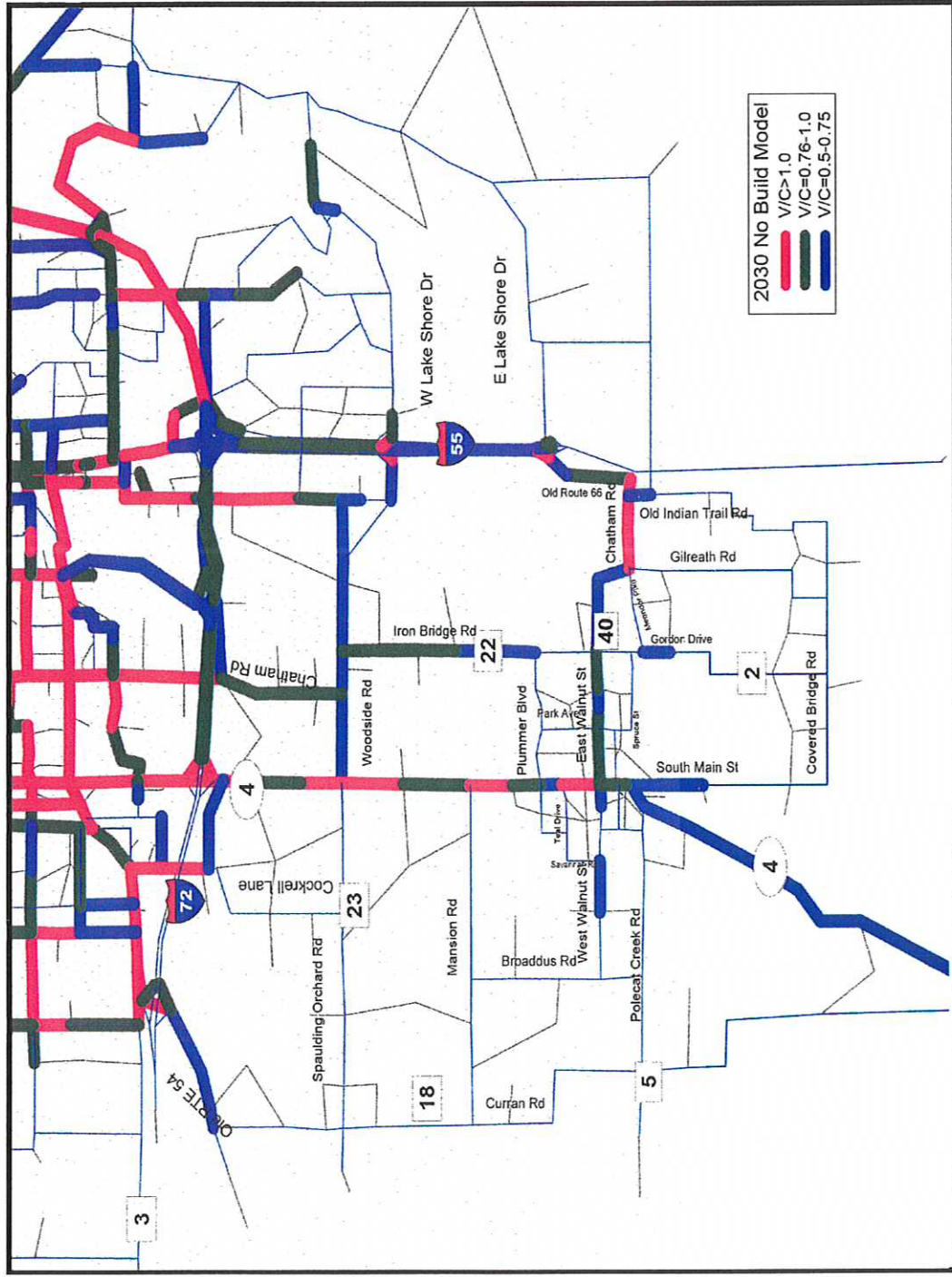


Exhibit 8: 2003-2030 Employment Growth





**Exhibit 9: Committed Roadway Projects**



**Exhibit 10: 2030 Model Capacity Deficient Roadways**



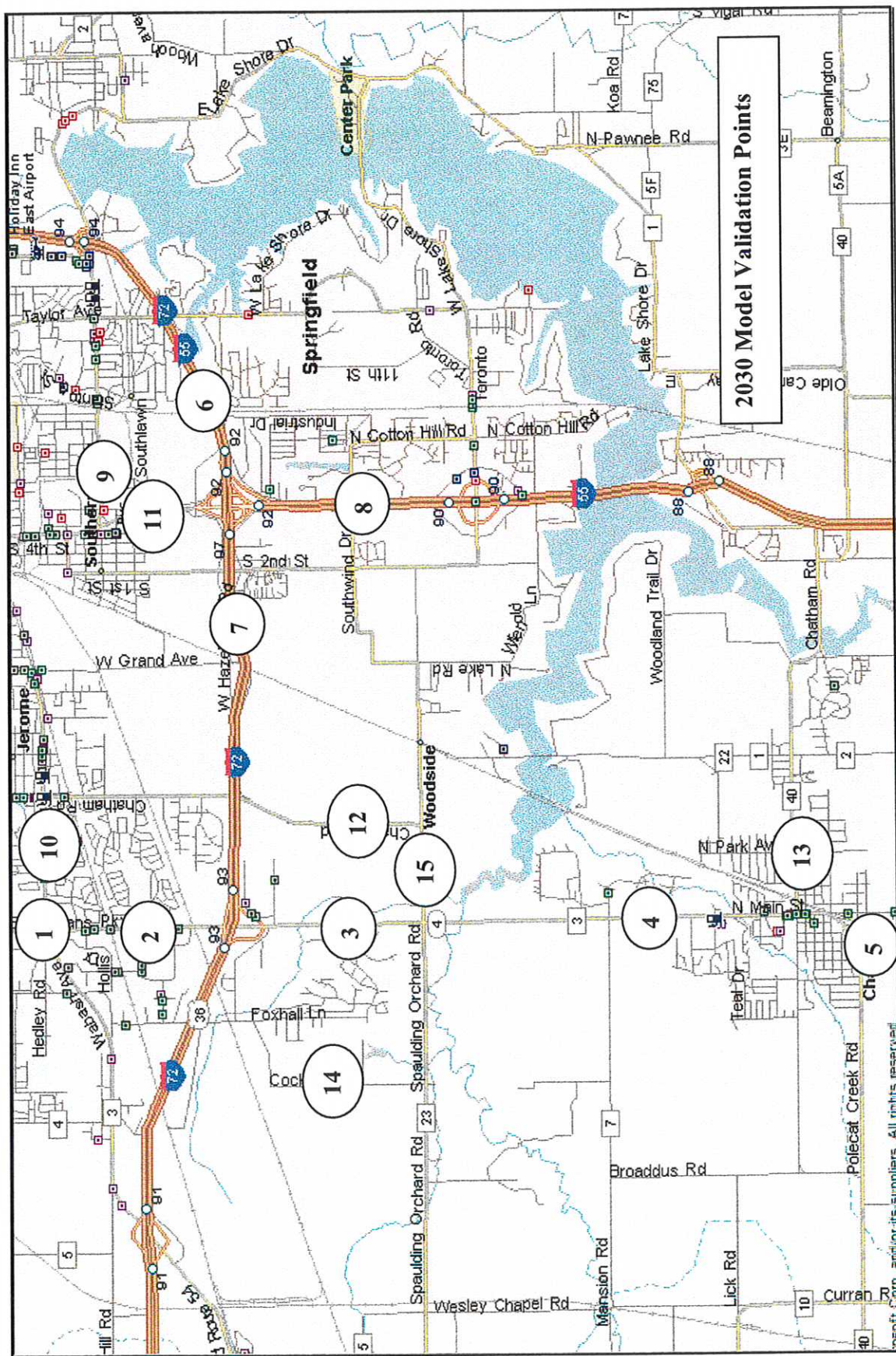
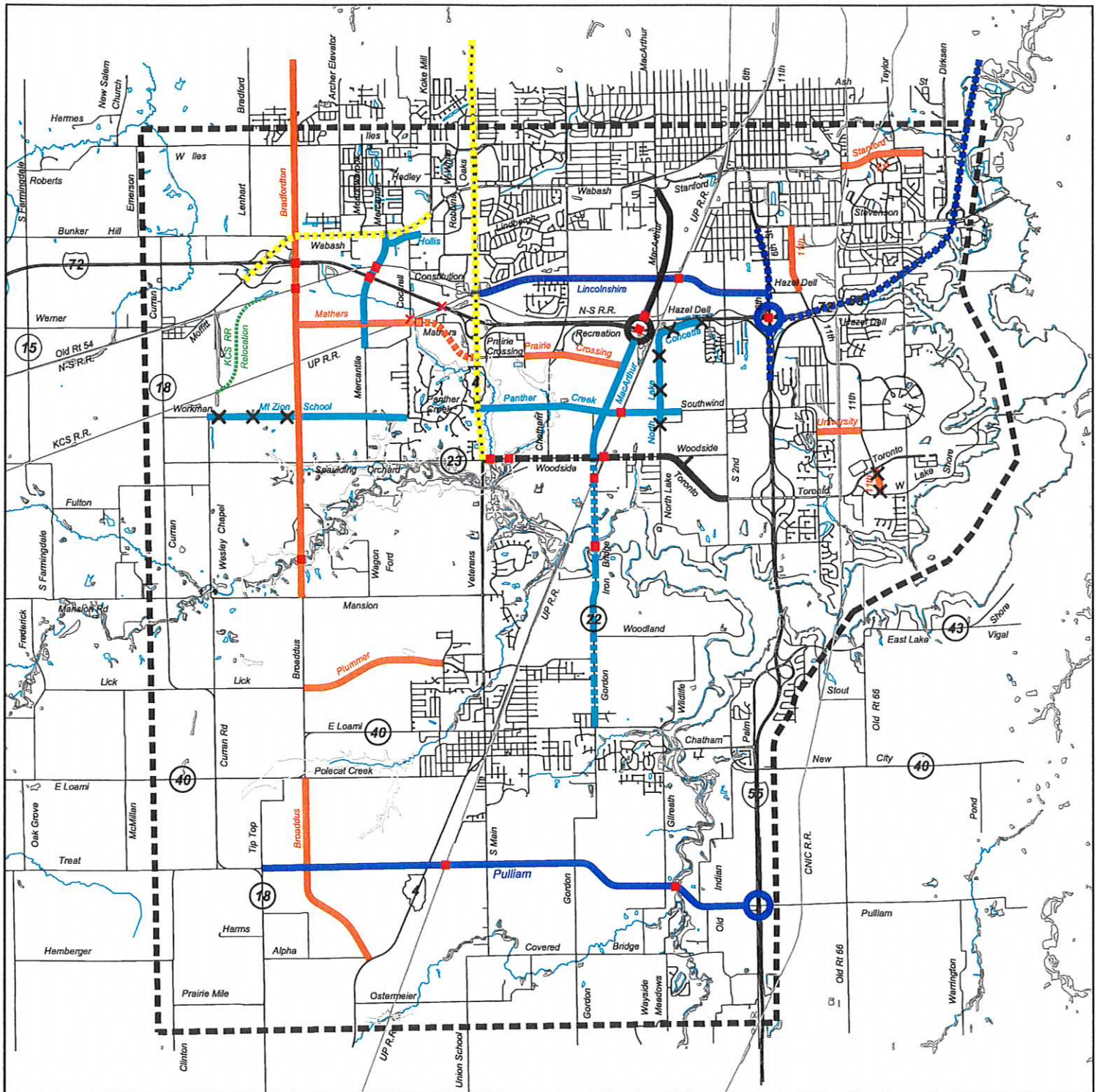


Exhibit 11: 2030 No Build Model Validation Points





## Legend

- |                        |                     |
|------------------------|---------------------|
| --- Study Area         | Local Streets/Roads |
| ■ New Bridge           | Interstate Highways |
| ✕ Remove RR Bridge     | State Highways      |
| — New Roadway          | County Highways     |
| --- Add Lanes          | Railroads           |
| ○ New Interchange      | Waterways           |
| --- Relocated Railroad | Committed           |

## MODELING SCENARIOS

A C  
B D  
E (ALL)

✕✕ Deleted Improvements



# EXHIBIT 12

## TRAVEL DEMAND MODELING SCENARIOS

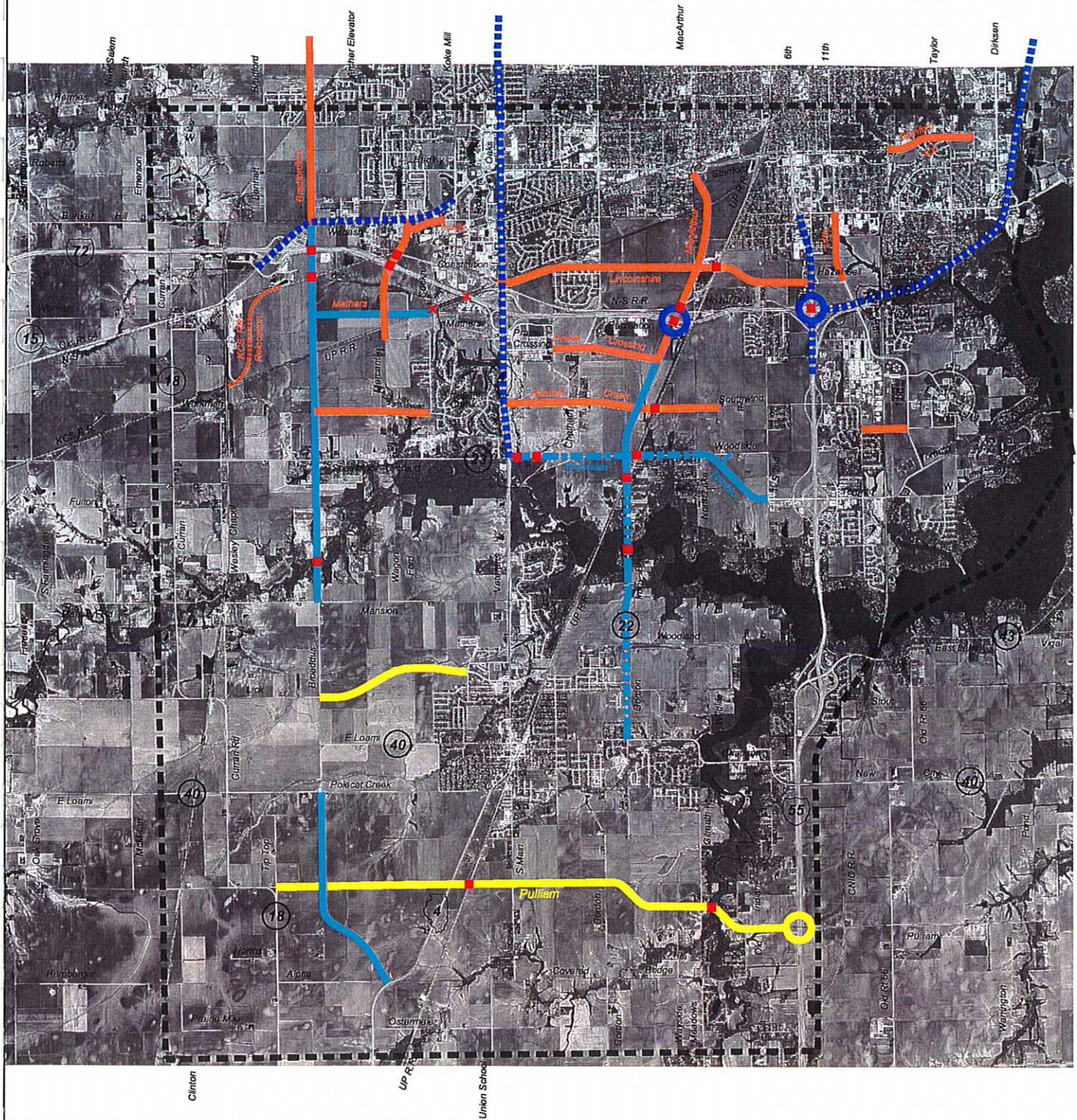
### South Growth Area-Corridor Development Planning Study

### Illinois Tomorrow Corridor Grant Program-Sangamon County

Two Way Average Daily Traffic Volumes								
	Total Lanes	2003	2030 (No Build)	2030 Scenario A	2030 Scenario B	2030 Scenario C	2030 Scenario D	2030 Recommended
Scenario A:								
I-55/72 E of I-55	6	45,900	67,000	71,500	n/a	n/a	n/a	72,900
Bus 55 N of I-72	6	27,400	34,700	40,900	n/a	n/a	n/a	29,800
Lincolnshire (Freedom Dr. to South 6th)	2	n/a	n/a	10,000	n/a	n/a	n/a	9,000
Pulliam (IL 4 to I-55)	2	n/a	n/a	4,500	n/a	n/a	n/a	6,000
Scenario B:								
11th Street (Hazel Dell to Stevenson Dr.)	4/5	n/a	n/a	n/a	17,000	n/a	n/a	13,000
Stanford Ave east extension	2	n/a	n/a	n/a	8,000	n/a	n/a	6,000
Praire Crossing extension	4	n/a	n/a	n/a	4,500	n/a	n/a	500
Mathers extension	2	n/a	n/a	n/a	1,500	n/a	n/a	500
Bradforton (north of Wabash)	2/3	n/a	n/a	n/a	8,000	n/a	n/a	7,500
Bradforton (south of Wabash)	2/3	n/a	n/a	n/a	4,000	n/a	n/a	2,500
Scenario C:								
MacArthur Ext. (south of I-72 to Woodside)	4	n/a	n/a	n/a	n/a	17,000	n/a	14,500
Iron Bridge south of Woodside	4	4,650	10,000	n/a	n/a	14,000	n/a	12,000
Panther Creek Drive extension	2	n/a	n/a	n/a	n/a	4,000	n/a	3,000
Mercantile Dr. extension south of Wabash	2	n/a	n/a	n/a	n/a	1,500	n/a	600
Scenario D:								
Wabash west of Koke Mill to I-72	4/5	11,000	17,000	n/a	n/a	n/a	21,000	21,000
IL 4 (north of Wabash)	6	28,500	31,500	n/a	n/a	n/a	41,250	41,000
IL 4 (I-72 to Wabash)	6	34,000	44,000	n/a	n/a	n/a	52,000	45,000
IL 4 (Woodside to I-72)	6	19,200	33,000	n/a	n/a	n/a	38,250	33,000
Other existing connections:								
Cockrell Lane (north of Mathers Road)	2	3,750	9,000	8,650	8,500	8,100	7,500	6,200
Woodside Road (East of IL 4)	2	8,500	16,500	15,000	14,250	18,000	16,500	15,000
Spaulding Orchard (CH 23) west of IL 4	2	1,200	2,000	2,000	2,100	2,100	2,000	1,500
MacArthur Ext (north of I-72)	4/5	n/a	18,000	18,500	15,000	21,000	16,000	18,000
Stevenson Dr E of Bus 55	4	27,900	38,500	37,800	33,000	37,900	37,300	30,000
Bus 55 N of I-72	4	27,400	34,700	n/a	29,000	34,000	33,300	n/a
I-72 W of I-55	4	34,200	50,300	51,400	49,600	57,800	51,500	59,000
I-55 S of I-72	6	45,800	66,000	71,200	68,200	60,500	64,000	62,000
Wabash E of IL 4	4	25,000	33,000	31,200	31,100	32,300	33,700	29,900
Wabash west of Koke Mill to I-72	2/3	11,000	17,000	16,500	12,000	15,500	n/a	n/a
Iron Bridge Road south of Woodside Rd.	2	4,650	10,000	8,500	9,000	n/a	9,500	n/a
Chatham Road N of CH 23	2	8,400	12,600	12,000	11,600	12,700	12,000	11,000
IL 4 (north of Wabash)	4	28,500	31,500	31,000	31,000	32,500	n/a	n/a
IL 4 (I-72 to Wabash)	4	34,000	44,000	41,000	40,000	43,000	n/a	n/a
IL 4 (Woodside to I-72)	4	19,200	33,000	32,750	31,400	31,000	n/a	n/a
IL 4 (Chatham to Woodside Rd.)	4	17,700	29,000	28,600	29,400	29,000	30,500	30,000
CH 40 east of IL 4	2	7,900	13,800	12,400	13,200	12,800	12,700	9,800

Exhibit 13: Comparison of Daily Volumes for the Alternative Scenarios





### Legend

- |                          |                      |
|--------------------------|----------------------|
| --- Study Area           | Local Streets/ Roads |
| ■ New Bridge             | Interstate Highways  |
| ✕ Remove RR Bridge       | State Highways       |
| — New Roadway            | County Highways      |
| ■■■■ Add Lanes           | Railroads            |
| ○ New Interchange        | Waterways            |
| ..... Relocated Railroad |                      |

### JURISDICTIONS

- |   |             |
|---|-------------|
| A | IDOT        |
| B | SPRINGFIELD |
| C | COUNTY      |
| D | CHATHAM     |

## EXHIBIT 14

### ROADWAY NETWORK PLAN

South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Grant Program-Sangamon County







STREET & HIGHWAY PROJECTS

2030 LONG RANGE PLAN

February 7, 2005

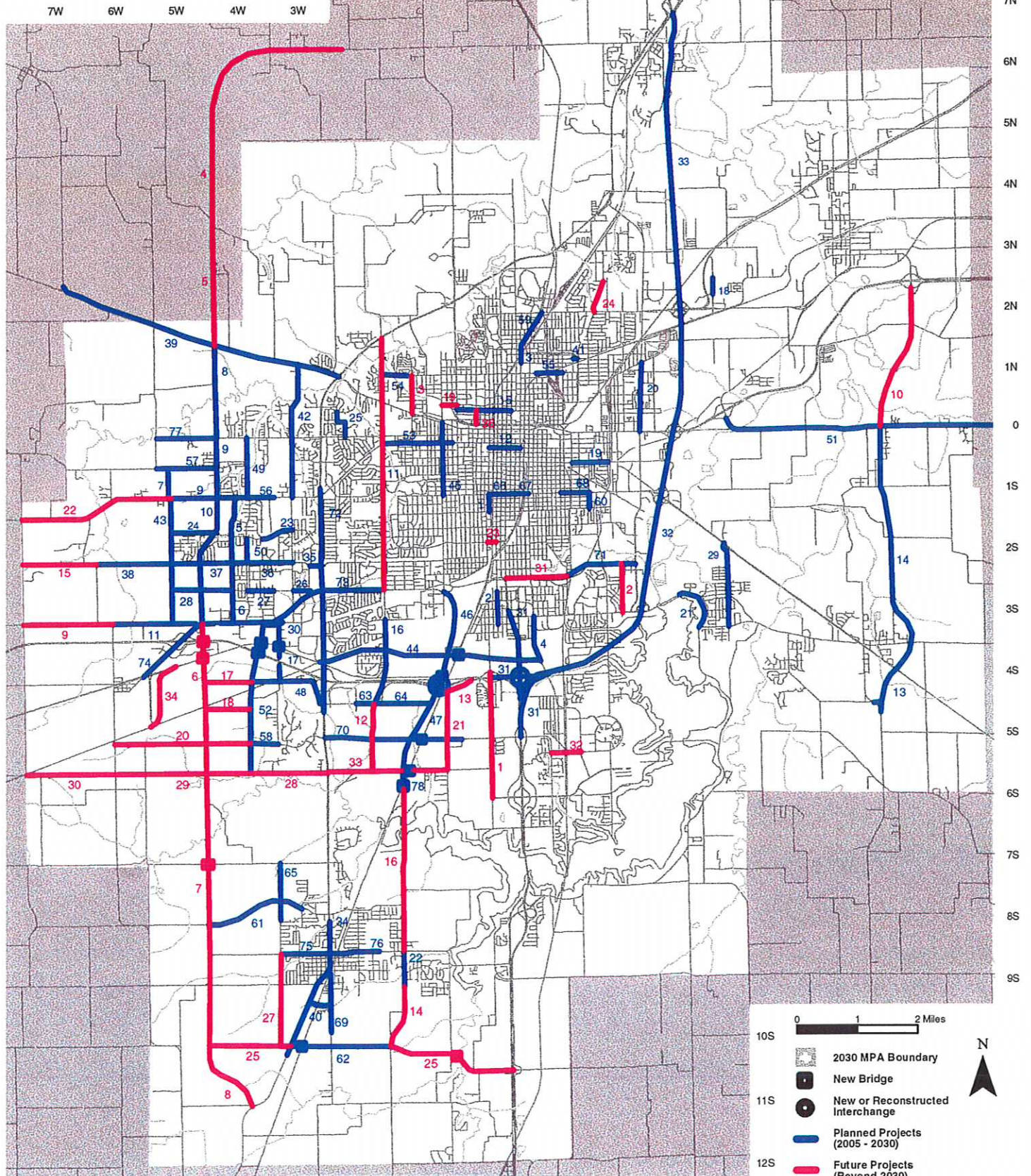


Exhibit 16: SATS Long Range Map



## **APPENDIX A – County and TAC Documentation**

1. April 5, 2002 SATS Meeting
2. May 6, 2003 Meeting with Sangamon County
3. May 16, 2003 Meeting with SSCRPC staff
4. May 29, 2003 Meeting with SSCRPC staff
5. October 16, 2003 Meeting with Sangamon County
6. December 23, 2003 Meeting with Sangamon County
7. May 12, 2004 Meeting with SSCRPC staff
8. June 4, 2004 TAC Meeting No. 1
9. August 20, 2004 Land Use Meeting with SSCRPC staff
10. September 3, 2004 TAC Meeting No. 2
11. October 15, 2004 TAC Meeting No. 3
12. December 3, 2004 TAC Meeting No. 4
13. February 14, 2005 Meeting with Sangamon County
14. February 16, 2005 Meeting with IDOT
15. March 4, 2005 TAC Meeting No. 5

## **SOUTH GROWTH AREA-CORRIDOR STUDY**

Notes from April 5, 2002 SATS meeting.

1. CMT's agreement scheduled for County Board approval on April 9, 2002.
2. Road and Bridge Committee's only comments were questioning the need for a study since they already know that Woodside needs upgrading.
3. Craig Holland (sp?) is the contact at Crawford, Bunte, and Brammeier, Inc. that worked with HEI to update TRANPLAN for the MacArthur Extension study. Discussed using them with Phil K. to provide the traffic projections.
4. Look over the Southwest Springfield Study completed by HEI in the early 90's for the City.
5. New census and traffic data will not be available until after 2003.
6. The Comprehensive Plan was approved in late 2001. However there have already been over 25 amendments to the plan since January. The SSCRPC does not feel the plan is given much importance since an amendment is so easy to obtain. The map has not been updated since mid-2001 and is not being updated with amendments.
7. The County plans for the study to cost \$150,000 funded with 10% match by the County of \$15,000 and 90% or \$135,000 in State (IL Tomorrow) funds.
8. Phil explained the project to the SATS committee as follows:
  - \$150,000 project.
  - Corridor Planning Study.
  - Spaulding-Orchard Corridor is the intended focus.
  - Determine when additional lanes will be needed. Use as a programming tool.
  - There are 2 areas along Spaulding Orchard Road that are subject to flooding. This is a concern of the Counties. Do not want to have to close the road for this reason.
  - Traffic on Spaulding Orchard Road is increasing. Could soon be as high as 3-4,000 ADT.
  - The study will include comments about a north-south connector to relieve traffic on Veterans. The Bradforton Road extension could serve this purpose. Could extend Bradforton south of Chatham to IL. Route 4. The SSCRPC was glad to see this.
9. Phil will check on whether the study can be initiated since we will have an approved engineering agreement April 9<sup>th</sup>. This is a question since the County still needs an executed agreement with the State. The County will approve there part of the State agreement on 4-9-02.
10. This is supposed to be planning work. I may consider soliciting assistance from Harry Hopkins to help steer the County this way. Need to check the official role of the SSCRPC. Jim Moll told me that Harry Hopkins was constantly reminding him during the West Loop Study that it was planning work and not engineering work.

## MEETING MEMORANDUM

**MEETING DATE:** May 6, 2003; 2:00 pm

**LOCATION:** Sangamon County Highway Department Office

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Project Coordination Meeting

**ATTENDANCE:** Phil Koeberlein-County Engineer  
Jim Marsaglia-Assistant County Engineer  
Lou Dixon-Crawford, Murphy and Tilly, Inc.

The purpose of the meeting was to confirm the study objectives and scope of work. Lou provided a handout entitled Study Overview for discussion. Following is a summary of items discussed.

1. Phil said the study should focus more on the portion of the study area west of Veterans Parkway since so much planning has been accomplished with the MacArthur Extension Study east of Veterans Parkway. It was discussed to build on the work completed in the Cockrell Lane Study.
2. Phil said focusing the study on the Woodside/Spaulding-Orchard Road corridor is no longer needed although this corridor should be included in the transportation plan as a future multi-lane route.
3. Phil is very interested in working with Chatham, Springfield, and the SSCRPC to plan for a future south extension of Bradforton Road (future north-south county highway) from Wabash Ave to IL Route 4 south of Chatham. Loami Road west of Chatham should be shown as a key future link. Due to ROW constraints along existing IL 4 in Chatham, the southern terminus should extend to south of Chatham.
4. The KCS RR relocation (near Curran IL) plan developed during the Cockrell Lane project should continue to be pursued. The County is very interested in supporting this project in the future. Relocation of this railroad would be beneficial to both the City and County and should be a part of the SATS long-range plan. Lou stated that the estimated project cost for the relocation is \$4.5 M.
5. CMT should obtain the updated Urbanized Area Map from the SSCRPC for use in the study.
6. East of Veterans Parkway, the westerly extension of Southwind Road to Panther Creek Drive should be shown although a crossing of the UP RR (Amtrak) line may need to be further north depending on grade issues. This will require further investigation and could be discussed at the upcoming MacArthur Extension public information meeting scheduled for May 13th.
7. Phil said IDOT is working with the City of Springfield on the jurisdictional transfer of Chatham Road. IDOT would repair and resurface the road and provide the City with a significant lump sum payment in return for transfer of the jurisdiction.
8. Phil authorized CMT to contact Tracy Garrison at the County to obtain the necessary mapping needed for the study. It was discussed that initially GIS mapping is not necessary to complete the study.

9. It was agreed that a meeting with the SSCRPC should be held to review the study scope and discuss their role in the study. Phil said that since they are the planning agency for the area their in-house planners should provide or approve necessary land use projections.
10. Prior to the meeting with the SSCRPC Phil requested that the initial base mapping and transportation plan be developed along with an outline of the study report. It was discussed that at the meeting we determine what level of public involvement is appropriate for this study. Phil thought the level of public involvement should be similar to that for other planning document updates conducted by the SSCRPC. Phil does not want to have an early public informational meeting on this project as was conducted recently on the City of Springfield's Illinois Tomorrow Railroad consolidation project.

Prepared by:

  
\_\_\_\_\_  
Louis H. Dixon, P.E.  
Crawford, Murphy & Tilly, Inc.

## MEETING NOTES

**MEETING DATE:** May 16, 2003

**LOCATION:** SSCRPC Office

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Data Collection

**ATTENDANCE:** Susan Poludniak-SSCRPC  
Joe Zeibert-SSCRPC  
Lou Dixon-Crawford, Murphy and Tilly, Inc.

Following is a summary of items discussed.

1. Susan said the City is working with a business to locate south of Wabash Ave at the Bradforton Road intersection. This would be in conflict with extending Bradforton Road south of Wabash. The south extension of Bradforton is not shown on the Area Roadway Network Plan. Susan will have Dave K. from their office contact Phil Koeberlein about this.
2. Susan said most of the changes to the comprehensive plan have been approved by the City of Springfield the land use updates could be provided to CMT upon request. Their large-scale land use map will be updated soon.
3. Joe Zeibert will provide an electronic copy of the Urbanized Area map and what they have for corporate limits. Most of the electronic mapping used by the planning commission is older and was originally provided by the City.
4. Susan loaned a copy of the Sangamon County Greenways and Trail Plan dated September 1997 to CMT. Many of the maps in the report were hand produced.
5. Susan said the Comprehensive Plan does not include property lines. The thin lines are all existing roads.
6. The County's aerial tax maps are also available at 1"=400'.

## MEETING NOTES

**MEETING DATE:** May 29, 2003

**LOCATION:** SSCRPC Office

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Bradforton Road Extension

**ATTENDANCE:** Dave Kiliman-SSCRPC  
Susan Poludniak-SSCRPC  
Joe Zeibert-SSCRPC  
Rich Berning-City of Springfield  
Phil Koeberlein-Sangamon County Highway Department  
Lou Dixon-Crawford, Murphy and Tilly, Inc.

Following is a summary of items discussed.

1. Dave presented a preliminary plan for Wells Fargo as prepared by Hanson to locate along and south of Wabash Ave just west of the Interstate 72 interchange. The proposed site is approximately 15 acres.
2. Lou provided an aerial map illustrating the extension of Bradforton Road south of Wabash along approximately 5.0 W and explained that this extension was recommended in the West Loop Study.
3. Dave explained that Ash Grove Road would be extended east along the south side of the proposed Wells Fargo site. Wells Fargo would access Wabash from Ash Grove however IDOT may also grant direct access to Wabash Avenue.
4. It was discussed that the current Wells Fargo plan does not conflict with a future south extension of Bradforton Road. However, there may be a problem with the vertical grade of Bradforton extended at the intersection of Ash Grove extended if Bradforton is to overpass interstate 72. Rich suggested a preliminary profile for Bradforton Road be developed to determine how the two roads might intersect.
5. Rich described a regional detention concept that is being considered for the area. Under the plan a detention facility would be located between Interstate 72 and the N & S Railroad and individual properties would utilize the detention facility by agreement. Areas north of Interstate 72 would drain through a new culvert to be constructed by IDOT.
6. Phil suggested the South Growth Study being prepared by CMT include the roadway and railroad relocation planning that has been completed under the Cockrell Lane project. Rich agreed and suggested that all options be developed.
7. Rich explained that he is working on an agreement for the Kerasotes development along Wabash to include additional pavement in their roadway to accommodate a future extension of Mercantile Drive south of their property.
8. Phil commented that the South Growth Study could be used as a tool to expand the regional detention concept along with the transportation issues.



## MEETING MEMORANDUM

**MEETING DATE:** October 16, 2003; 1:30 pm

**LOCATION:** Sangamon County Highway Department Office

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Project Coordination Meeting

**ATTENDANCE:** Phil Koeberlein-County Engineer  
Lou Dixon-Crawford, Murphy and Tilly, Inc.  
Kristin Timmons-Crawford, Murphy and Tilly, Inc.

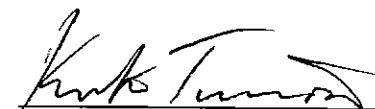
The purpose of the meeting was to continue discussion of the study objectives and possible alignment alternatives for the area southwest of Springfield. CMT provided aerial exhibits illustrating the proposed roadway network and land use plans. Following is a summary of items discussed.

1. The proposed Bradforton Road extension, as shown in the county's Comprehensive Plan was discussed. The current alignment south of I-72, illustrated on an aerial exhibit, is not ideal. It was decided that the alignment should be shown as CMT has proposed with the roadway extension continuing south to Spaulding-Orchard Road from the intersection with Wabash Avenue along a predominately straight, north-south alignment. Phil questioned how the profile of the extension would work with the new entrance planned for the Wells Fargo site. He asked that CMT obtain the plans for this entrance and check the profile.
2. The proposed KCS railroad relocation west of the Bradforton Road extension was also discussed. Phil asked the status of the Cockrell Lane study. Lou stated that the City is reviewing the project and may decide to only replace the existing Union Pacific RR Bridge, in which case they would not proceed with the railroad relocation improvement. Based on the potential benefits in opening up the area and the previous positive verbal discussions between the railroads, the county may want to consider recommending the railroad relocation move forward. Phil agreed that CMT should proceed with the study under the assumption that the KCS railroad relocation is the ultimate plan and address both the advantages and disadvantages of the relocation and how it would affect the proposed roadway network and land used plans.
3. Lou introduced the possibility of proposing a minor arterial further west along existing County Highway 18 or extending the IL 97 alignment, as shown in the West Loop Feasibility Study. This would then necessitate the railroad relocation improvement be moved further west to limit interference with any new roads. Phil prefers to maintain the proposed railroad relocation improvement in the current location, just east of Curran.
4. Phil requested that CMT further investigate the Bradforton Road extension south of I-72 and Spaulding Orchard Road while continuing efforts to minimize impacts to existing residences. He suggested using proposed ROW widths required for an urban section

north of Spaulding-Orchard Road and proposed ROW widths required for a rural section south of Spaulding-Orchard Road, and minimizing curves in the proposed route.

5. It was agreed that the alignment of the Bradforton Road extension south of Chatham to its intersection with IL Route 4 does not need to be determined at this stage. Phil asked that CMT check on existing roadway widths to evaluate the extension south of County Highway 40, which is a likely terminus. Phil stated that the County is currently looking at a proposed box culvert improvement that may require changes to the existing horizontal alignment of County Highway 40.
6. Lou requested additional information for the proposed Bradforton Road extension north of Wabash. Phil indicated that it is a proposed five-lane urban section and that the City is overseeing the plans for the extension south of Old Jacksonville to Wabash and should have a plan for the intersection of Bradforton Road and Wabash Ave. CMT will contact the City to obtain this plan.
7. Lou also requested additional aerial mapping to further study the Bradforton Road extension and possible routes west of CH 18, which is at the edge of the current mapping coverage. Phil will send Tracy Garrison an email approving the transfer of additional mapping.
8. The MacArthur extension was also discussed. Phil questioned building the proposed detour for the Woodside Road underpass, when Southwind Road could be extended west across MacArthur. The extension of Southwind Road would provide a detour as well as a permanent intersection.
9. Phil would like CMT to refine the proposed roadway network plan in the area of the MacArthur and Prairie Crossing extensions as well as the Panther Creek extension. He would like to limit the intersections along Woodside Road. In addition, check with IDOT on the proposed plan for Recreation Drive related to the MacArthur extension.
10. CMT and Phil may consider meeting with the S-SC Regional Planning Commission in the future to discuss revisions to the land use plan based on the proposed roadway network.

Prepared by:

  
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Kristin Timmons, E.I.  
Crawford, Murphy & Tilly, Inc.

## MEETING MEMORANDUM

**MEETING DATE:** December 23, 2003; 9:00 am

**LOCATION:** Sangamon County Highway Department Office

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Project Review and Coordination Meeting

**ATTENDANCE:** Phil Koeberlein-County Engineer  
Lou Dixon-Crawford, Murphy and Tilly, Inc.  
Kristin Timmons-Crawford, Murphy and Tilly, Inc.

The purpose of the meeting was to update the county on the progress of the project, continue discussion of the alignment alternatives, and to discuss the task of traffic analysis. CMT provided aerial exhibits illustrating the proposed roadway network. Following is a summary of items discussed.

1. The future roadway network was presented on an aerial exhibit and the latest revisions were discussed.
2. The proposed connection of Recreation Drive to the MacArthur extension was discussed. Lou explained that according to discussions with IDOT District 6 the Recreation Drive connection proposed in the MacArthur extension project was shortened to reduce the construction cost and the number of property owners impacted. IDOT feels the long-range plan for Recreation Drive could continue to be a direct east-west connection between the MacArthur extension and Chatham Road.
3. Phil questioned whether there was adequate distance between the existing UP Railroad and the proposed MacArthur extension south of I-72, as measured along the future Southwind Drive west extension. This is relevant to providing a future overpass of Southwind over the railway. Lou suggested that the elevation of the proposed MacArthur extension might have to be raised to accommodate this concept. CMT will further study this issue and report back to the County.
4. Lou referenced the recent meeting held in Chatham on December 16, 2003. Illinois State Representative Rich Brauer (100<sup>th</sup> District) along with representatives from IDOT District 6, Sangamon County, CMT, the Chatham Village Board, and approximately 25 members of the general public were in attendance at the meeting. Representative Brauer organized the meeting to address the Villages concerns with increasing traffic congestion along IL Route 4, particularly through Chatham. Representative Brauer explained that he has had several meetings with IDOT officials on this issue. IDOT spokespersons Bill Martens and Christine Reed described the significant impacts and costs associated with widening IL Route 4 through Chatham. They discussed the importance of planning and developing alternative north south routes between Springfield and south of Chatham, and discussed the importance of improving the entire transportation system east and west of Chatham and not just IL Route 4. According to IDOT officials the MacArthur extension is expected to take the pressure off IL Route 4. Construction of the first phase of the MacArthur project is expected to be underway by summer 2005.
5. Lou brought up the issue of the traffic analysis for this study. He explained that in recent years separate traffic studies have been completed for both the MacArthur and Cockrell Lane projects in the southwest portion of Springfield. However these traffic studies have not been coordinated and do not cover the entire south growth area. The original study scope included 120 hours or about 7% of the budget for traffic analysis.
6. Lou recommended that consideration be given to increasing the traffic analysis component of the study to include development of a traffic model to more thoroughly evaluate and prioritize transportation corridors in the study area. Lou referenced the TRANPLAN Update proposal submitted in March 2003 to the planning commission by Crawford, Bunte, Brammeier (CBB) and CMT, and suggested that a portion of the work

outlined in that proposal be incorporated into this study. This would require reallocation of remaining study resources currently estimated as follows:

STUDY TASK	HOURS ALLOCATION (12-31-03)	
	CURRENT	PROPOSED
▪ Scope Development	30	20
▪ Data Collection	20	20
▪ Base Map Preparation	40	40
▪ Roadway Network Plan	100	40
▪ Land Use Plan	90	20
▪ Traffic Analysis	120	350-500
▪ Alternatives Analysis	330	150-300
▪ Public Involvement	270	140
▪ Report Preparation	120	180
▪ Coordination and Meetings	65	75
▪ Administration	65	65
<b>Totals</b>	<b>1250</b>	<b>1250</b>

7. Lou suggested that the reallocation of resources include having the planning commission staff develop alternative land use plans for the study area as needed. This will save on resources and be more efficient as well as involve the planning commission more directly in the study. It was also noted that according to IDOT District 6, the 2003 traffic data needed for the modeling will not be available until Spring 2004.
8. Phil stated that he is interested in pursuing development of a traffic model and suggested a meeting be scheduled with the planning commission to discuss the project and their availability to provide land use planning assistance. Phil will call the planning commission to set up the meeting.
9. Phil also stated that he would like to see the Bradforton Road extension evaluated as well as the proposed east-west connector roads. The railroad relocation alternative at Curran should also be included in the model.
10. Lou will further review the remaining hours in the study and possibly discuss the traffic analysis task with CBB, and check on their availability.
11. Phil stated that IDOT might need to approve CBB as a sub consultant on this study and will call and check on this.
12. The 1" = 200' scale maps of the Bradforton Road and Southwind Road extensions, and a preliminary profile of Bradforton Road were presented and discussed.
13. Phil provided CMT with a CD and prints of the county's plans for the Bradforton Road extension north of Wabash. These are to be returned to the county.
14. CMT provided a draft copy of the report and initial exhibits to the county for information.

Prepared by:



Kristin Timmons, E.I.  
Crawford, Murphy & Tilly, Inc.

## **SATS COMMITTEE MEETING – FRIDAY, APRIL 2, 2004**

### **South Growth Area Corridor Development Planning Study Sangamon County**

#### **1. General**

- FY 02 IL Tomorrow Planning Grant
- Sangamon County
- Grant Amount - \$150,000
- Project Initiated March 2003
- 30% Complete

#### **2. Study Area**

- See Exhibit - shaded area
- Evaluate a new North-South County Highway west of IL Route 4 (Bradfordton Extension)
- Proposed roadways/extensions
- Evaluate existing transportation network and develop future network to serve the South Growth Area.

#### **3. Study Process**

- Base Mapping
- Opportunities/Constraints Map
- Identification of Planned Roadway Improvements
- Transportation Demand Modeling (2030)
- Land Use Scenarios (Low, Medium, & High Growth)
- Alternatives Analysis
- Recommendations
- Public Information Meeting
- Documentation/Report

#### **4. Stakeholders**

- SSCRPC
- City of Springfield
- Sangamon County
- IDOT District 6
- SMTD
- Village of Chatham
- Utility Companies
- Property Owners
- School Districts

#### **5. Schedule**

- May – Initiate Traffic Modeling
- Fall – Public Information Mtg. & Documentation
- March 2005 – Completion

**TECHNICAL ADVISORY COMMITTEE BRIEFING  
SOUTH GROWTH AREA-CORRIDOR DEVELOPMENT  
PLANNING STUDY**

ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**AGENDA- JUNE 4, 2004**

1. Technical Advisory Committee
  - ☐ SSCRPC
  - ☐ Sangamon County
  - ☐ Springfield
  - ☐ Chatham
  - ☐ IDOT
2. Meetings and Coordination since the April SATS meeting
  - ☐ May 12<sup>th</sup> met with SSCRPC staff
  - ☐ May 26<sup>th</sup> met with Village of Chatham
3. Base Mapping for Study:
  - ☐ See attached study area map showing traffic study limits
  - ☐ Have developed preliminary opportunities/constraints mapping for the study area
  - ☐ Have obtained April 2003 aerial mapping of entire traffic study area
  - ☐ Will soon have planimetrics from Sangamon County of the traffic study area.
4. Existing Traffic Data and Regional Demand Model Update
  - ☐ 2003 traffic data to be provided by mid-July (through the SSCRPC)
  - ☐ Obtained current and historic IDOT traffic maps and census data
  - ☐ Obtained current comprehensive plans and zoning maps for Springfield, Chatham, and Sangamon County
  - ☐ Obtaining residential and commercial development data since 2000 census
  - ☐ Obtaining growth projections from UIS and LLCC
  - ☐ Converting the existing SATS TRANPLAN model to the Cube/Voyager software.
  - ☐ Updating the socio-economic data in the model with available land use and other information described above
  - ☐ Updating the 1991 network to reflect 2003 conditions including current functional classifications
  - ☐ Calibrating the 2003 model for the traffic study area to 2003 traffic conditions

5. Land Use and Traffic Forecasts, and Alternatives Evaluation
  - ❑ Up to 3-scenarios of future land use (reflecting low, medium and high growth rates) will be developed jointly with SSCRPC staff for input into the model, and will be reviewed and confirmed with the *Technical Advisory Committee*.
  - ❑ Develop and confirm the committed transportation network with input from the *Technical Advisory Committee*.
  - ❑ Develop 2030 traffic forecasts for the committed transportation network.
  - ❑ Test up to 5 alternatives and identify transportation deficiencies and needs.
6. Determine and document the features, costs, and impacts of each proposed transportation improvement. Identify priority improvements.
7. Complete the transportation network study mapping and review with the *Technical Advisory Committee*.
8. Public Involvement, documentation, and *Technical Advisory Committee* input
9. Finalize study
10. Study Schedule (Based on receipt of 2003 traffic data by mid-July 2004)
  - ❑ June-August 2004: Data gathering, Travel Demand Model Update, Land Use Scenarios
  - ❑ September 2004: *Technical Advisory Committee* briefing and input
  - ❑ September-October 2004: Traffic Forecasts, and Alternatives Evaluation
  - ❑ November 2004: *Technical Advisory Committee* briefing and input
  - ❑ November 2004-December 2004: Determine features, costs and impacts
  - ❑ January 2005: Complete network map
  - ❑ February 2005: *Technical Advisory Committee* briefing and input
  - ❑ February-March 2005: Public Involvement
  - ❑ April 2005: *Technical Advisory Committee* briefing and input
  - ❑ April 2005: Finalize documentation

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## **South Growth Planning Study (Springfield, IL) Travel Demand Modeling & Forecasting Meeting Summary**

**DATE:** May 12, 2004

**TIME:** 1:00 – 3:00 PM

**SUBJECT:** SSRPC Coordination

**LOCATION:** SSRPC

### **MEETING PARTICIPANTS**

<b>Name</b>	<b>Agency</b>
Veralee Williams	SSRPC
Susan Poludniak	SSRPC
Tracy Garrison*	Sangamon County/Information Systems
Lou Dixon	CMT
Doug Shatto	CBB
Shawn Leight	CBB
Bill Davison	CBB
Jiji Kottommannil	CBB

\*Tracy Garrison attended only the end of the meeting

### **DISCUSSION ITEMS**

The purpose of the meeting was to kickoff the traffic modeling phase of the project and coordinate on the data collection task. Specifically, the following items were discussed:

- Chatham has recently received a \$100,000 grant from IDOT for a transportation planning study. The South Growth Planning Study and this new study will need to be coordinated.
- Data collection (project tasks 1 and 2.1) was discussed at length:
  - IDOT is in the process of processing their 2003 traffic counts, which are due out by the end of June, at the earliest. These counts will be important in the calibration of the modeling efforts being completed by CBB. Veralee will check with IDOT regarding which counts they may be able to release, and to see if they can concentrate on the study area in order to release these early for use in the study.
  - Sangamon County, through CMT, will provide aerial photographs and GIS files of the study area, provided that CBB signs a “use of data” release.
  - Susan said that she would provide 2000-2003 residential development data in the Springfield area to cover the period between the 2000 Census and the 2003 IDOT



counts. Bill Davison is responsible for gathering commercial growth data for this period. Brad Warren at the Chamber of Commerce should have employment numbers (or building area).

- CBB will research plans for projected student population and growth at UIS and Lincoln Land.
- Veralee will provide CBB with Springfield zoning maps.
- SSCRPC provided the following information to CBB. Items 12-14 are to be returned to SSCRPC.
  - 1) Village of Chatham Comprehensive Plan (1990-2010), September 1994
  - 2) Springfield Comprehensive Plan (2000-2020), December 2000
  - 3) 1980 Census Analysis, July 1983
  - 4) 1990 Census Analysis, April 1994
  - 5) CTPP Part 1- IL Data by Place of Residence, June 2003
  - 6) CTPP Part 2- IL, IA Data by Place of Work, January 2004
  - 7) 1985 Traffic Map - Sangamon County
  - 8) 1998 Traffic Map - Sangamon County
  - 9) 1972 Traffic Map - Springfield and Vicinity
  - 10) 1985 Traffic Map - Springfield and Vicinity (South)
  - 11) 1998 Traffic Map - Springfield and Vicinity (South)
  - 12) Springfield Metropolitan Area Transportation Study South and West Areas, Volume 1: Transportation Modeling and Road Needs, July 1992
  - 13) Springfield Metropolitan Area Transportation Study South and West Areas, Volume 2: Corridor, Intersection and Interchange Studies, April 1992
  - 14) SATS TRANPLAN model files – 16 floppy disks
- SSCRPC is comfortable with CBB converting the regional demand model to the CUBE platform (project task 2.2).
- CBB will be coordinating closely with SSCRPC staff for TAZ restructuring (project Task 2.3) as well as the development of future (2030) population and land use forecasts (project Task 4.1), which will be required in the modeling process.

Prepared by: Shawn Leight 05/14/04 (Revised 05/18/04)

## MEETING MEMORANDUM

**MEETING DATE:** June 4, 2004; 10:00 am

**LOCATION:** Springfield-Sangamon County Regional Planning Commission (SSCRPC)

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02

**SUBJECT:** Project Review and Coordination Meeting

**ATTENDANCE:** Phil Koeberlein-Sangamon County Engineer  
Harry Hopkins-SSCRPC Director  
Veralee Williams-SSCRPC  
Tim Sheehan-Springfield City Engineer  
Russ Militello-IDOT District Six, Program Development  
Terry Fountain-IDOT District Six, Local Roads  
Betsy Tracy-IDOT Office of Planning and Programming  
Mike Williamson-Village of Chatham Engineer  
Doug Shatto-Crawford, Bunte, Brameier  
Bill Davison-Crawford, Bunte, Brammeier  
Lou Dixon-Crawford, Murphy and Tilly, Inc.

The purpose of the meeting was to discuss the regional nature of the South Growth Planning Study and the formation of a Technical Advisory Committee (TAC), and to review the proposed traffic modeling scope of services and study schedule. Following is a summary of items discussed.

1. Due to the regional impacts of expanding or developing new transportation corridors, the County proposes the formation of a TAC composed of representatives of the Springfield-Sangamon County Regional Planning Commission, Sangamon County, City of Springfield, Village of Chatham, and the Illinois Department of Transportation. In the future other entities or individuals will be invited to join or attend meetings of the TAC as needed. The TAC's role is to meet periodically throughout the course of the study and provide input and direction to the County while reaching consensus on the final recommendations of the South Growth study. Today was the first meeting of the TAC.
2. Lou Dixon described the Illinois Tomorrow Initiative goals as follows:
  - Help local governments develop plans that promote the efficient use of transportation facilities by integrating transportation and land use/development decisions making.
  - Provide funding to counties and municipalities in urbanized areas to support planning activities.
  - Support planning activities that promote the integration of land use, transportation and infrastructure facility planning in transportation corridors.
  - Promote effective integration of land use plans, development decisions, and infrastructure investments.
  - Support planning activities that reduce traffic congestion and enhance travel choices.
3. A revised study area map was provided to the TAC. The study area has been expanded to accommodate the traffic modeling process and corridor alternatives evaluation. The study area now includes from Iles Ave. (north) to Covered Bridge Road (south) to Interstate 55 and Lake Springfield (east) to Curran Road or County Highway 18 (west).

4. Mike Williamson suggested that the orange shading be removed from the study area map to avoid confusion. Russ Militello agreed and explained that the area south of Wabash Ave in the immediate vicinity of the MacArthur Extension should be included in the study due to the availability of existing utilities and strong potential for development as documented in the West Loop Study.
5. Russ cautioned the TAC and study team that the number and scope of alternatives that can be considered in the study is financially constrained, particularly with the expanded study area, and that additional funding may be required to adequately complete the study to everyone's satisfaction. In addition, public involvement is recommended to enhance the value of the study.
6. Lou indicated that a public information meeting is included in the study scope. To date 30% of the \$150,000 study budget has been expended on data collection, mapping, project meetings, and coordination. In addition \$50,000 of the study budget has been allocated to the traffic modeling effort.
7. Lou explained that the Sangamon County Information Systems Department has provided aerial mapping and planimetrics for the entire expanded study area for use in the study.
8. Doug Shatto with Crawford, Bunte, and Brameier gave an overview of the traffic modeling effort and discussed how land use scenarios will be used to evaluate the transportation network. The Study team will be meeting with the SSCRPC staff later in the summer to discuss and develop land use options. These will then be reviewed and confirmed with the TAC prior to proceeding with the next phase of the study.
9. Mike indicated that the Village of Chatham plans to coordinate their transportation study closely with the South Growth Study. Lou agreed that both studies should supplement one another.
10. Russ said the Springfield Functional Classification Map has been recently updated and IDOT can provide a copy to the Study Team.
11. Russ explained that IDOT is currently completing their recounts for the 2003/2004 traffic map and the data should be available for areas outside of the Springfield vicinity by August 1<sup>st</sup> and areas within the Springfield vicinity by September 1<sup>st</sup>. Doug stressed the need to receive this information as scheduled to keep the study moving forward. Russ indicated that the data would be made available in ArcView format.
12. The potential for further Wal-Mart expansion within the study area was discussed. As traffic studies become available for these projects this information can be provided to the Study Team.
13. Harry Hopkins recommended the Study Team meet with the Springfield Park District as well as the SSCRPC staff to get more specific information on known planned development within the study area. It was discussed that any pending development or transportation improvements will be included as part of the committed network.

Prepared by: Lou Dixon, P.E. *LXD*  
Crawford, Murphy & Tilly, Inc.



Crawford, Bunte, Brammeier  
Traffic and Transportation Engineers

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## South Growth Planning Study (Springfield, IL) Travel Demand Modeling & Forecasting Meeting Agenda

**DATE:** August 20, 2004

**TIME:** 9:00 AM – 12:00 PM

**SUBJECT:** SSRPC Coordination  
Land Use Forecasts

**LOCATION:** SSRPC

### ANTICIPATED MEETING PARTICIPANTS

Name	Agency	Name	Company
Veralee Williams	SSRPC	Lou Dixon	CMT
Susan Poludniak	SSRPC	Shawn Leight	CBB
		Jiji Kottommannil	CBB

### DISCUSSION ITEMS

**Meeting Purpose:** Update SSRPC staff on the study's progress and develop future (2030) land use scenarios as discussed in Task 4.1 of the scope of services.

#### 1. Study Progress:

- By the end of August CBB is anticipating the completion of Task 1 and 2
- Tasks 3-4 are anticipated to be complete by the end of September
- Tasks 5-6 are anticipated to be complete by the end of November
- Data provided to CBB has been/will be used for the following purposes:

Data Item	Agency	Purpose	Status
1992 Tranplan Files / Reports	SSCRPC	Base Network	Complete
GIS / Aerial Photography	Sangamon County	Network Update	
IDOT Functional Classification	IDOT		
2000 CTPP	US Census	Land Use Update	
2000-2003 Residential Data	SSCRPC		
2000-2003 Employment Data	Economic Dev. Council		
UIS and Lincoln Land Interviews	CBB		
IDOT/Chatham Counts	IDOT	Calibration	In Progress
Zoning Maps	SSCRPC	Land Use Forecast	Task 4
Historical Census Data		Traffic Forecast QA	
Historical Traffic Maps			
Previous Studies	Various	Land Use/Committed	
Comprehensive Plans	SSCRPC	Committed Network	
Sangamon County TIP	Sangamon County		

## 2. Significant Points with Model Update / Calibration

- Factors for scripts were taken from 1992 study
  - There is no recent household travel survey
  - Factors compared with NCHRP 365 – compare favorably
  - Factors will be compared with American Community Survey data during calibration
- Cube allows for much more representative network (show model plots)
- Model was expanded from 140 to 200 square miles
- All roadways classified as collector and above were added to the model
- TAZs were split in order to:
  - Account for existing roadways and railroads
  - Accomodate future alternatives
  - TAZs were expanded from 260 to 300
- EWGCC staff was consulted on calibration methodology
  - They are currently undergoing a major recalibration of the St. Louis regional model
- The Village of Chatham was consulted regarding collaboration for their planning study
  - They will be completing their part of the model update with their consultant

## 3. Land Use Scenario Development Issues

- Known data (handout)
- Study area control population
- Springfield / Chatham Comprehensive Plan build out versus control population
- Scenarios
- Employment projections

## 4. Key Dates

- August 20, 2004
  - SSCRPC project update (Model update and calibration)
  - Develop land use scenarios with SSCRPC
- September 3, 2004
  - SATS project update (Model update and calibration)
  - SATS approve land use scenarios and “committed” network
- October 2004
  - SATS project update (“Committed” network forecasts)
  - SATS approve alternative “build” scenarios
- December 2004
  - SATS project update (Alternatives Analysis)

**TECHNICAL ADVISORY COMMITTEE UPDATE**  
**SOUTH GROWTH AREA**  
**CORRIDOR DEVELOPMENT PLANNING STUDY**  
ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**AGENDA.....September 3<sup>rd</sup>, 2004; 9:00 AM**

1. Technical Advisory Committee (TAC)
  - ☐ SSCRPC
  - ☐ Sangamon County
  - ☐ Springfield
  - ☐ Chatham
  - ☐ IDOT
  - ☐ Others
2. Meetings and Coordination since the June 4<sup>th</sup> TAC meeting
  - ☐ June 24<sup>th</sup>-The County and Village of Chatham met to coordinate the scope of work of the County's South Growth Study and Chatham's Transportation Planning Study
  - ☐ August 19<sup>th</sup>-SATS Long Range Planning Meeting
  - ☐ August 20<sup>th</sup>-Meeting held at the SSCRPC to develop Land Use scenarios
3. Items received and completed:
  - ☐ June-Updated the study area map with digital planimetric and aerial mapping of the expanded traffic study area provided by the County
  - ☐ July 21<sup>st</sup>-Received 2003 traffic data and the most recent functional classification map from IDOT
  - ☐ August 20<sup>th</sup>-Received the SSCRPC 2020 Land Use and Trail Maps in digital format
  - ☐ July/August-Converted the existing TRANPLAN travel demand model to CUBE/VOYAGER software; Updated and calibrated the converted model to current (2003) conditions
4. 2030 Land Use Scenario development and confirmation (handout)
  - ☐ Only one land use scenario is being brought forward (versus up to three or low, medium and high)
  - ☐ Overall growth rate assumptions are 5% per 10 years for both population and employment
  - ☐ SSCRPC provided "most likely" growth areas in the context of the area's comprehensive and land use plans
  - ☐ Population and employment in developed areas are assumed to remain constant

5. Committed Transportation Network confirmation
  - Committed roadways are typically those that are funded. The need for these projects does not need to be “evaluated” as they are already in progress. Include the following:
    - Toronto Road Extension from 2<sup>nd</sup> Street to Woodside Road (4-lanes)
    - 
    - 
    -
6. Next Steps
  - September-Develop 2030 traffic forecasts for the committed transportation network and alternative build scenarios
  - October 1<sup>st</sup>-Meeting with the TAC to review 2030 traffic forecasts and obtain approval of alternative build scenarios
  - October/November-Alternatives analysis, evaluation, and reporting
  - December 3<sup>rd</sup>-Presentation to the TAC
  - December 2004-Determine and document the features, preliminary impacts, and costs of each proposed transportation improvement. Identify priority improvements.
  - January 2005-Complete the transportation network study mapping and exhibits
  - February-Presentation to TAC
  - March-Public Involvement
  - April-Finalize study

## MEETING MEMORANDUM

**MEETING DATE:** September 3, 2004; 9:00 am

**LOCATION:** Springfield-Sangamon County Regional Planning Commission (SSCRPC)

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02  
Sangamon County

**SUBJECT:** Technical Advisory Committee (TAC) Meeting No. 2

**ATTENDANCE:** Harry Hopkins, Springfield-Sangamon County RPC  
Veralee Williams, Springfield-Sangamon County RCP  
Susan Poludniak, Springfield-Sangamon County RPC  
Phil Koeberlein, Sangamon County  
Richard Fix, Springfield MTD  
Tim Sheehan, City of Springfield  
Mike Pfeiffer, City of Springfield  
Mike Williamsen, Village of Chatham  
Bill Martens, IDOT District Six (attended a portion of meeting)  
Russ Militello, IDOT District Six  
Betsy Tracy, IDOT OP&P  
Carl Mikyska, IDOT-OP&P  
Robin Helmrichs, FHWA  
John Donovan, FHWA  
Jim Moll, Hanson Professional Services (attended a portion of the meeting)  
Shawn Leight, Crawford, Bunte, Brammeier  
Lou Dixon, Crawford, Murphy and Tilly, Inc.

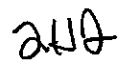
The purpose of the meeting was to review and confirm the 2030 Land Use Forecast and committed transportation network for use in the upcoming traffic modeling activity. Following is a summary of items discussed.

1. Lou handed out an agenda and gave a general overview of the work completed during the past few months (June-August 2004). This included a working session with planners at the SSCRPC on August 20<sup>th</sup> to develop 2030 Land Use Forecast for the traffic study. Lou discussed the purpose of today's meeting and said the focus would be on agenda items 4 and 5 in order to finish in about one hour.
2. Shawn handed out copies of a Technical Memorandum outlining the proposed 2030 Land Use Forecasts and summarized the document as follows:
  - Overall growth rate assumptions are 5% per 10-years for both population and employment.



- ❑ SSCRPC planners provided CBB with the locations of “most likely” growth in the context of the growth areas identified in the comprehensive and land use plans and their knowledge of the area. CBB distributed the anticipated growth to these areas.
  - ❑ Population and employment in developed areas are assumed to experience no loss.
  - ❑ Only one land use scenario is being carried forward (versus three; low, medium, and high) as agreed upon by members of the study team.
- 3. Shawn explained Exhibits 1 and 2 and described the methodology used to develop the 2030 household and employment forecasts and to allocate these to the identified growth areas.
- 4. Shawn explained that the UIS and LLCC campus areas are being given special attention by introducing a new trip purpose to account for the trips made by college students.
- 5. Veralee commented that CBB’s 2000 population assumption for their model does not appear to match census data. It appears that CBB’s base population is slightly higher than calculated by SSCRPC. However, CBB used CTPP data, which is usually slightly different from traditional census data. Moreover, the exact model (TAZ) boundaries have not been provided to SSCRPC so it is difficult to tell exactly which areas are included in the modeled area. CBB agreed to provide Veralee with a TAZ map of the entire model area to help rectify differences.
- 6. The Technical Memorandum provided by CBB should not refer to their modeled area as the “SATS Urban Area” but rather they should call it the “Springfield/Chatham Planning Area”. CBB should footnote that this area is the area used in their model.
- 7. Table 1 should be titled “Historical Population Trends”. Table 2 should be titled “Demographic Projections for the Model Area”.
- 8. Mike W. questioned the household growth rate that was assumed for Chatham. In particular, he asked whether CBB assumed low-density residential growth for Chatham. He will give CBB input regarding appropriate rates. Shawn and Mike W. agreed that CBB would assume an overall population growth in Chatham of about 7,000 by 2030.
- 9. Phil agreed with the recommendation of one 2030 land use scenario.
- 10. It was agreed that the 2030 Land Use forecasts would be modified in any alternatives that relocate the KCS RR west of Cockrell Lane near Curran Illinois to account for commercial land uses.
- 11. Russ suggested that more development should be expected north of I-72 along the proposed MacArthur extension. CBB agreed to incorporate this growth area in their revised 2030 land use forecasts.
- 12. Shawn indicated that the Land Use Technical Memorandum would be updated and redistributed for further review and comment based on comments provided at today’s meeting.
- 13. Lou explained that input was needed from the TAC on what new roads should be assumed to be in place for transportation modeling purposes. These roads are assumed to be part of the committed transportation network and do not require further evaluation.

14. It was agreed the MacArthur Extension from Stanford/Wabash to the proposed interchange with I-72 is part of the committed network. The section is scheduled for bidding in 2005.
15. The Toronto Road extension from South Second St. to Woodside Road is another project in the study area that will be considered in place. It is currently under construction.
16. It was discussed that completion of the 11<sup>th</sup> St. extension could be considered committed since a portion of the funding is in place, however the City of Springfield considers its probability of completion to be low so it will remain uncommitted for this studies purposes.
17. Mike W. requested that the proposed east-west connector south of Chatham, from I-55 and Pulliam to west of IL. 4, be modeled in the study. Lou indicated that at this time it was not included in the study scope, however it might be considered if the County agrees.
18. The next TAC meeting is currently planned for Friday October 15<sup>th</sup>, at 9:00 AM to finalize the 2030 Land Use Forecasts, review the 2030 committed network traffic forecasts, and confirm alternative build scenarios for further modeling.

Prepared By: Louis H. Dixon, P.E.   
Crawford, Murphy & Tilly, Inc.

Shawn J. Leight  
Crawford, Bunte, Brammeier



LHD  
CBB

**RECEIVED**  
OCT 05 2004  
CMT, INC.

October 4, 2004

MEMO TO: SATS Technical & Policy Committee Members  
FROM: Veralee Williams  
RE: **SOUTH GROWTH MEETING**

Lou Dixon (Crawford, Murphy & Tilly) and Shawn Leight (Crawford, Bunte, Brammeier) will present an update of the South Growth Study including 1) finalizing the 2030 Land Use Forecasts; 2) reviewing the 2030 committed network traffic forecasts; and 3) alternative build scenarios.

**DATE:** Friday, October 15, 2004  
**TIME:** 9:00 AM  
**PLACE:** Planning Commission Conference Room

VW/mjn

**TECHNICAL ADVISORY COMMITTEE UPDATE**  
**SOUTH GROWTH AREA**  
**CORRIDOR DEVELOPMENT PLANNING STUDY**  
ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**AGENDA.....October 15<sup>th</sup>, 2004; 9:00 AM**

**Technical Advisory Committee (TAC)**

- ☐ SSCRPC
  - ☐ Sangamon County
  - ☐ Springfield
  - ☐ Chatham
  - ☐ IDOT
  - ☐ Others
1. Finalize 2030 Land Use Forecasts
    - ☐ See 2030 Land Use Forecast Summary, Draft Final, October 1, 2004
  2. Review 2003 Model Calibration
    - ☐ See Model calibration handout
  3. Review 2030 Model Outputs
    - ☐ Existing roadways
    - ☐ Committed roadways
    - ☐ See Volume and V/C plots
  4. Discuss/Concur on Scenarios for Alternatives Analysis
    - ☐ Alternatives are grouped into "build scenarios"
    - ☐ What groupings will give the committee the best information?
    - ☐ See handouts
  5. Next Steps
    - ☐ November: Traffic forecasts and evaluation
    - ☐ December: TAC meeting.
    - ☐ December: Traffic forecasts, evaluation and priorities
    - ☐ Finalize traffic study
    - ☐ TAC meeting
    - ☐ Features, impacts and costs of alternatives
    - ☐ TAC meeting.
    - ☐ Public Involvement
    - ☐ TAC meeting
    - ☐ Finalize study

**TECHNICAL ADVISORY COMMITTEE UPDATE**  
**SOUTH GROWTH AREA**  
**CORRIDOR DEVELOPMENT PLANNING STUDY**  
ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**AGENDA.....December 3<sup>rd</sup>, 2004; 10:00 AM**

**Technical Advisory Committee (TAC)**

- ☐ SSCRPC
- ☐ Sangamon County
- ☐ Springfield
- ☐ Chatham
- ☐ IDOT
- ☐ Others

1. 2003 Model
2. 2030 Model-No Build
3. 2030 Model-Traffic Forecasts
  - Committed Improvements
  - Scenario A
  - Scenario B
  - Scenario C
  - Scenario D
  - Scenario E
4. Historic Traffic Volumes and Projected Traffic Growth
  - I-55/72 east of Business 55 (6<sup>th</sup> St.)
  - I-72 west of I-55
  - I-55 south of I-72
  - IL. 4 (Veterans) north of I-72
  - IL. 4 south of Mansion Road
  - Stevenson Drive east of Business 55
  - Wabash east of IL. 4 (Veterans Parkway)
  - Business 55 north of I-72
  - Chatham Road north of CH 23 (Woodside Road)
  - CH 40 east of IL. 4
5. 2030 Model Validation Points
6. Discussion of modeling results and next steps
7. Cube Software Demonstration

MEETING MEMORANDUM

**DRAFT**

**MEETING DATE:** December 3, 2004; 10:00 am

**LOCATION:** Springfield-Sangamon County Regional Planning Commission (SSCRPC)

**PROJECT:** South Growth Area-Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02  
Sangamon County

**SUBJECT:** Technical Advisory Committee (TAC) Meeting No. 4

**ATTENDANCE:** Veralee Williams, Springfield-Sangamon County RCP  
Susan Poludniak, Springfield-Sangamon County RPC  
Jim Marsaglin, Sangamon County Highway  
Tim Sheehan, City of Springfield  
Mike Pfeiffer, City of Springfield  
Mike Williamsen, Greene and Bradford  
Bill Martens, IDOT District Six  
Russ Militello, IDOT District Six  
Carl Mikyska, IDOT-OP&P  
Robin Helmrichs, FHWA  
John Donovan, FHWA  
Shawn Leight, Crawford, Bunte, Brammeier  
Jiji V. Kottommannil, Crawford, Bunte, Brammeier  
Bill Davison, Crawford, Bunte, Brammeier  
Lou Dixon, Crawford, Murphy and Tilly, Inc.  
Eric Hansen, Crawford, Murphy and Tilly, Inc.

The purpose of the meeting was to present the travel demand modeling results of the 2030 Alternatives Analysis. The consultant team handed out an agenda (attached) and handouts. Lou briefly discussed the meeting purpose and Shawn Leight gave a presentation (attached) of the alternatives analysis results. The following is a summary of the substantive discussion points:

1. Lou Dixon asked to verify whether South MacArthur Extension has been coded as a 2-lane or a 4-lane roadway in the model. Shawn responded that the roadway had been coded as 4-lanes. Shawn was unsure of what previous studies had concluded about laneage requirements for this roadway, but suggested that traffic volumes in the model dictate a need for 4 lanes.<sup>1</sup>
2. The group discussed how land use was applied in the model and revisited the methodology, assumptions, and results of the Land Use Forecasting Technical Memorandum submitted and approved in October 2004.

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<sup>1</sup> Subsequent to the meeting CBB explored the laneage requirements for the South MacArthur Extension. This roadway is coded as 4 lanes in the 2030 Model Scenario C and carries 15,000-20,000 vpd (30 or 35 mph). Under a 2 lane assumption, it carries about 11,000-13,000 vpd (30 or 35 mph) and has a V/C between 0.9-1.0.

SOUTH GROWTH STUDY  
TAC MEETING NO. 4

3. The group discussed how a South McArthur/Iron Bridge widening project would impact Route 4. Shawn commented that one major finding of the analysis is that none of the other proposed alternatives do much to lessen traffic volumes on Route 4 due to its prominence and associated land uses.
4. Lou and others pointed out that Lincolnshire extension would not tie into Route 4 but would go under it and connect to a local street. CBB agreed to make this change in the model.<sup>2</sup>
5. Lou wanted to verify the laneage of existing 11th Street (partly 4 lanes), Chatham Road and Cockrell Lane in the models. CBB agreed to verify these laneages in the models.<sup>3</sup>
6. A question was posed related to how CBB coded the free-flow speeds in the model. Shawn mentioned that speeds were assumed based on roadway functional classification, consistent with industry practice. (It should also be noted that this methodology is consistent with the coding of the remainder of the model).
7. Shawn discussed the traffic forecast validation graphs (attached) and mentioned that the model's forecasts are consistent with those from past studies.
8. The group requested that in the final report that CBB show actual LOS for Route 4, I-72, and I-55 (as opposed to V/C ratios). CBB agreed to this request.
9. After Shawn presented the alternatives analysis results, Jiji presented an introduction to 4-step travel demand modeling (attached). He then gave a demonstration of Cube, the software which was used to develop the Springfield Travel Demand Model for this project.
10. As a next step, it was agreed to set up a meeting between the Consultant Team and the County Highway Department to discuss the alternatives analysis results and wrap up of the modeling work.

**Prepared By:**            **Shawn J. Leight, P.E, PTOE**  
                                     **Crawford, Bunte, Brammeier**

**Louis H. Dixon, P.E.**  
**Crawford, Murphy & Tilly, Inc.** *LDW*

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<sup>2</sup> CBB made these changes after the meeting. In the revised model in Scenario A this extension is connected to Freedom Drive at the western terminus. Lincolnshire extension (30 mph speed assumption) carries about 7,000-10,000 vpd east of Mac Arthur Extension, about 5,000-10,000 vpd between Chatham Rd and Mac Arthur Extension and about 2,000-5,000 vpd west of Chatham Rd.

<sup>3</sup> Subsequent to the meeting CBB verified that the laneages coded in the model for these roadways are correct.



# Springfield South Growth Study

## Dec 3<sup>rd</sup>, 2004 Technical Advisory Committee meeting issues

### 1. Mac Arthur South Extension

At the Dec 3<sup>rd</sup> TAC meeting, you had asked to verify whether South Mac Arthur Extension has been coded as a 2-lane or a 4-lane roadway in the model and what previous studies had concluded about laneage requirements for this roadway.

This roadway is coded as 4 lanes in the 2030 Model Scenario C and carries 15,000-20,000 vpd (30 or 35 mph). Under a 2 lane assumption, it carries about 11,000-13,000 vpd (30 or 35 mph) and has a V/C between 0.9-1.0. Please refer to **Figures 1 and 2**. The MacArthur Study<sup>1</sup> makes no mention of the laneage of the roadway. However, the feasibility study<sup>2</sup> conducted prior to the Mac Arthur Study assumed it to be a 4 lane roadway.

### 2. Lincolnshire Extension (Scenario A)

You and others had pointed out that Lincolnshire extension would not tie into Route 4 but would go under it and connect to a local street.

In Scenario A, this extension is connected to Freedom Drive at the western terminus. Lincolnshire extension (30 mph speed assumption) carries about 7,000-10,000 vpd east of Mac Arthur Extension, about 5,000-10,000 vpd between Chatham Rd and Mac Arthur Extension and about 2,000-5,000 vpd west of Chatham Rd. **Figure 3** shows the volumes when Lincolnshire tied into Route 4 and **Figure 4** shows the volumes when it ties into Freedom Drive.

### 3. Chatham Bypass

You had asked us to run a scenario with a 'Chatham Bypass' which would serve as an alternative to Route 4 in Chatham.

A four lane 35-40 mph facility (similar to existing Route 4) was assumed as a 'bypass' to Route 4. Existing Route 4 was downgraded to a minor arterial south of Woodside Road. The Bypass carries about 10,000-18,000 vpd and existing Route 4 carries about 6,000-18,000 vpd in Chatham. Volumes on Route 4 north of Woodside increase about 5-10%. The volumes are shown in **Figure 5**.

Assuming Route 4 is widened to 6 lanes north of Woodside Rd, the bypass carries about 10,000-18,000 vpd and existing Route 4 carries about 6,000-18,000 vpd in Chatham. Volumes on Route 4 north of Woodside increase about 25%. The volumes are shown in **Figure 6**.

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<sup>1</sup> 'Mac Arthur Boulevard Extension, Springfield, IL', prepared by CBB and submitted to Hanson Engineers, June 2001

<sup>2</sup> 'Preliminary Feasibility Study Report, Mac Arthur Boulevard Extension, Springfield, IL', prepared by Hanson Engineers and submitted to the City of Springfield, IL, August 1998

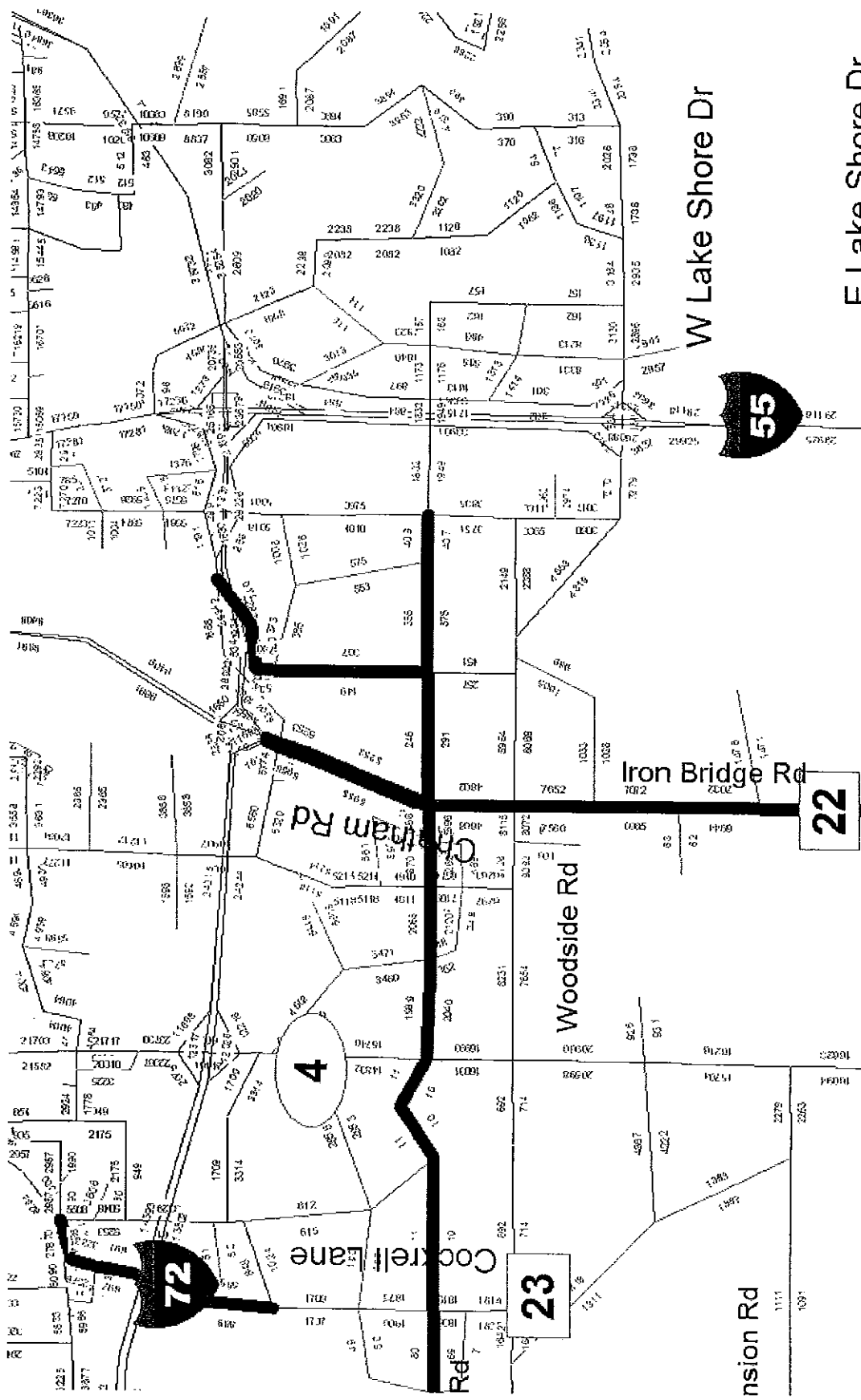


Figure 1: Traffic Volumes (vpd) with South Mac Arthur Extension coded as a 2 lane roadway (30 mph speed)

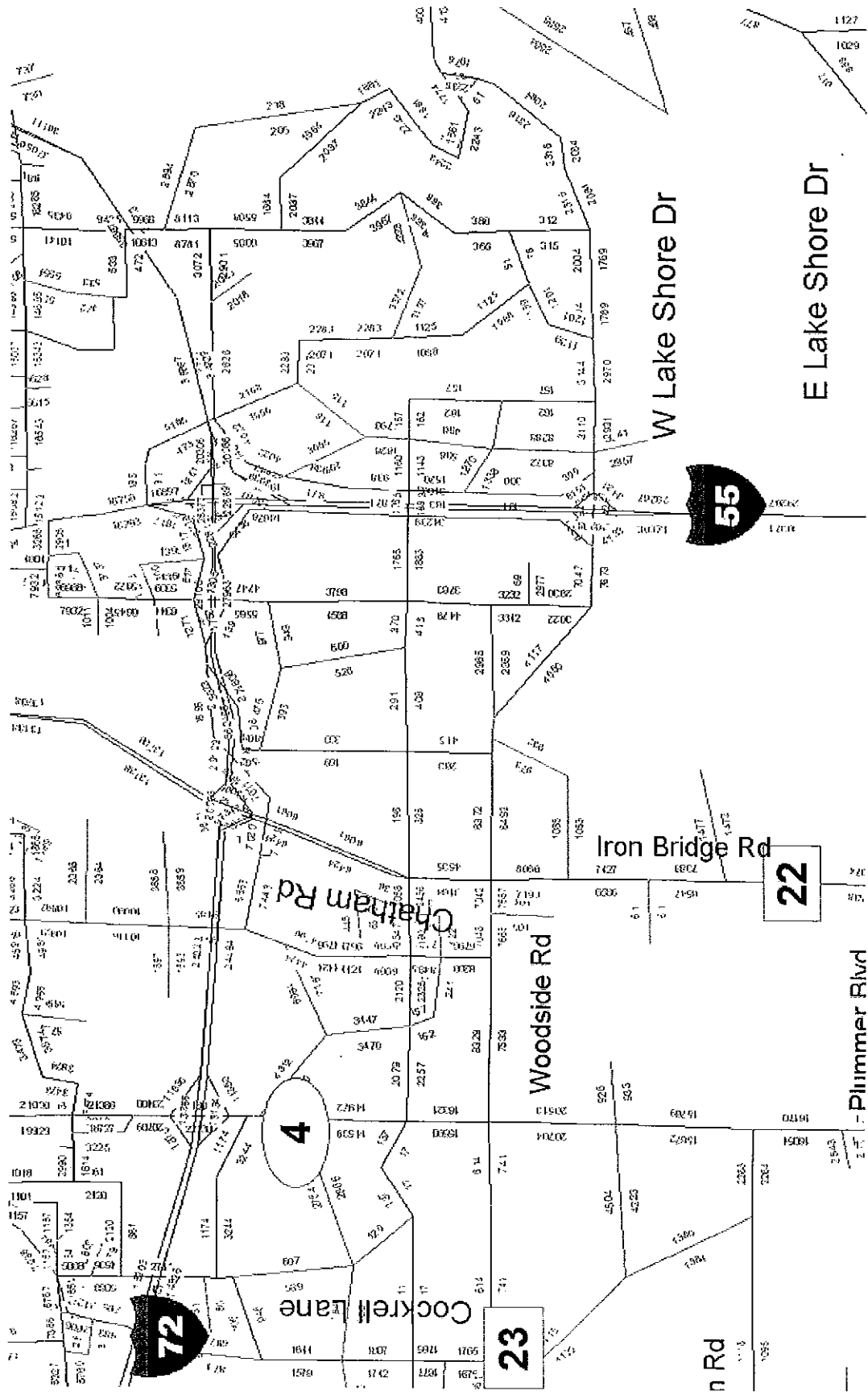


Figure 2: Traffic Volumes (vpd) with South Mac Arthur Extension coded as a 2 lane roadway (35 mph speed)



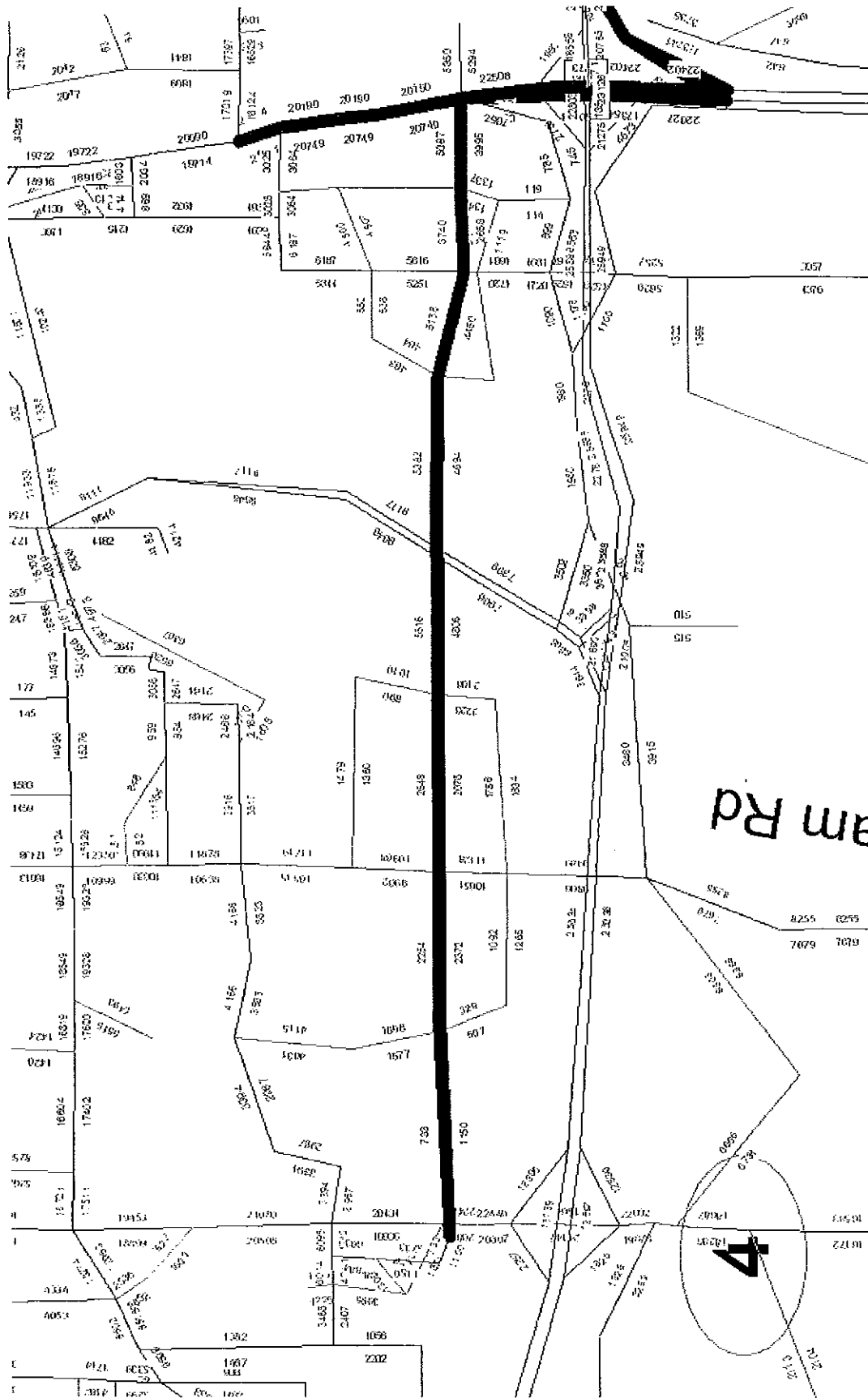


Figure 4: Traffic Volumes (vpd) with Lincolnshire Extension tying into Freedom Drive (Scenario A revised)

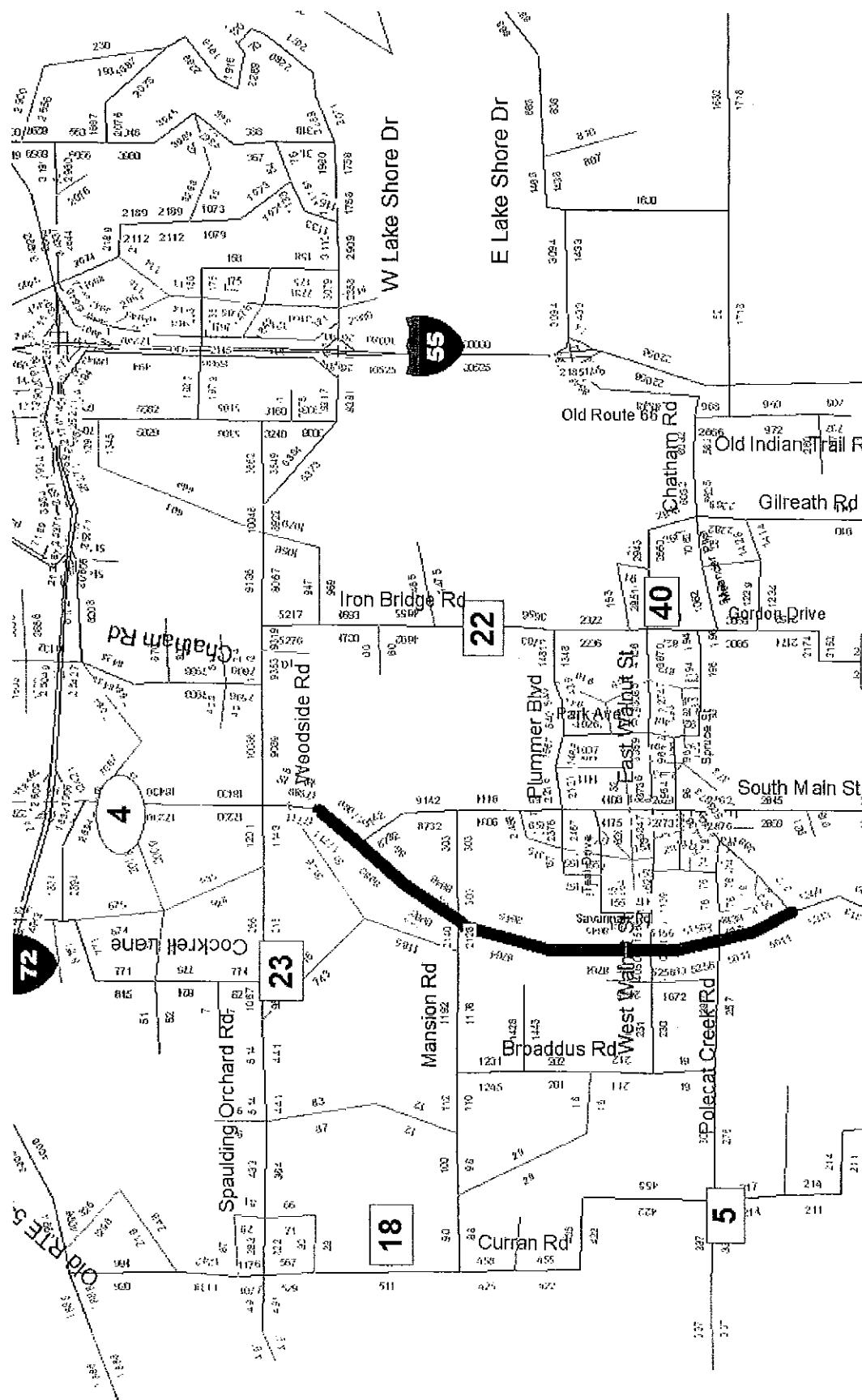


Figure 5: Traffic Volumes (vpd) with Chatham Bypass





## **SOUTH GROWTH AREA**

### **CORRIDOR DEVELOPMENT PLANNING STUDY**

ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

#### **COORDINATION MEETING**

**February 14<sup>th</sup>, 2005; 9:00 AM**

#### **AGENDA**

1. Project Overview
2. Travel-Demand Study Summary
  - 2030 Land Use Forecasts
  - 2003 Cube/Voyager Model and Calibration
  - 2030 No-Build Model Outputs (No-Build Volume and V/C plots)
  - Alternatives Development
  - Historic Traffic Volumes and Projected Traffic Growth
  - North/South (Springfield/Chatham) Alternatives
  - East/West (South Springfield) Alternatives
  - Miscellaneous Alternatives
  - 2030 Model Validation Points
3. Chatham Bypass Alternative
4. Proposed Roadway Network Plan
5. Coordination with Chatham's Study
6. Next Steps
  - Roadway Network Plan Revisions
  - Finalize Travel-Demand study
  - Meeting with Chatham and IDOT
  - Final recommendations to TAC
  - Develop preliminary scope, impacts, and costs of County projects
7. Other items

**SOUTH GROWTH AREA  
CORRIDOR DEVELOPMENT PLANNING STUDY**

ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**COORDINATION MEETING AT IDOT DISTRICT SIX  
REPRESENTED: Sangamon County, District Six, Chatham, CMT**

**Attendees: Christine Reed, Forman Hardwick, Russ Militello, Dan Mlaknic, Tim Zahrn, Jim Marsaglia, Mike Williamsen, Stan Hansen, Lou Dixon, Shawn Leight, Lori Williams.**

**February 16<sup>th</sup>, 2005; 2:00 PM**

**AGENDA**

1. Project Overview
2. Travel-Demand Study Summary and Results
3. Chatham Bypass Alternative
4. Proposed Roadway Network Plan
5. Next Steps
  - Review recommendations with the TAC
  - Finalize the travel-demand report and recommendations
  - Remaining scope items to be discussed with County

**Meeting Notes:**

1. No problem with proceeding with this recommendation in the study.
2. Suggest a public information meeting be held at the end of the study to illustrate the results.
3. A champion is needed for a Chatham Bypass to be studied further.
4. CMT and CBB will prepare a final draft and review it with the County and then the TAC. Then a public meeting could be scheduled. Draft should be ready by mid March (in a month).
5. A Chatham bypass is just an idea at this time. It makes sense from an engineering viewpoint but there will be other factors to consider.
6. The County should consider keeping a Bradforton Extension south of Spaulding Orchard for future needs.
7. May need to meet with the City of Springfield to refine there network prior to completing the Draft report.

**TECHNICAL ADVISORY COMMITTEE (TAC)  
COORDINATION MEETING  
SOUTH GROWTH AREA**

**CORRIDOR DEVELOPMENT PLANNING STUDY**

ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM-FY 02  
SANGAMON COUNTY, ILLINOIS

**March 4<sup>th</sup> following SATS meeting; Room 212, Sangamon County Complex**

<b>TAC: SSCRPC</b>	<b>CHATHAM</b>
<b>IDOT</b>	<b>SPRINGFIELD</b>
<b>FHWA</b>	<b>SANGAMON COUNTY</b>

**AGENDA**

1. Current results and recommendations from December 2004 session.
2. Chatham Bypass Alternative
  - IDOT District Six general comments from 2.16.05 meeting.
    - ✓ A Chatham bypass is just an idea at this time. It makes sense from an engineering viewpoint but there will be other factors to consider. A champion is needed for a Chatham Bypass to be studied further.
    - ✓ No problem with proceeding with this recommendation in the study.
    - ✓ Suggest a public information meeting be held at the end of the study to get the results out to the public
    - ✓ The County should consider keeping a Bradforton Extension south of Spaulding Orchard for future needs.
    - ✓ Suggested meeting with the City of Springfield to refine their network prior to completing the Draft report.
  - Chatham's preliminary comments
3. Public information meeting discussion and content (if required)
4. Tentative Schedule for completion
  - TAC meeting and coordination.....March 05
  - Submittal of draft report.....March/April 05
  - Coordination and review meeting(s).....April/May 05
  - Public Information Meeting (if required).....May 05
  - Final report.....May/June 05

**MARCH 4, 2005 MEETING NOTES:**

1. IDOT questioned the Chatham Bypass saying that development would be encouraged to go west of a new bypass which is not desirable.
2. IDOT was very adamant that Iron Bridge Road should be widened to 4-lanes south of Woodside Road.
3. Mike Williamsen said the Chatham Village Board was not very excited about a Chatham bypass.
4. It was agreed to put the South Growth Study on hold until the Chatham study is further along.
5. A draft report will be submitted to the County in about a month which will remain an internal document for now until the Chatham study is further along.
6. Tim Zarhn suggested that the South Growth Study list findings as opposed to recommendations for now.

**APPENDIX B – 2030 Land Use Forecast Summary (Oct. 2004)**



Crawford, Bunte, Brammeier  
Traffic and Transportation Engineers

—Since 1973—

## Technical Memorandum (FINAL)

**Date** October 14, 2004 (Revised)

**To:** Lou Dixon, P.E.  
Crawford, Murphy and Tilly, Inc.  
Consulting Engineers  
2750 W. Washington Street  
Springfield, IL. 62702  
217-787-8050

**Subject:** South Growth Area Corridor Development Planning Study  
Illinois Tomorrow Corridor Planning Grant Program-FY 02  
Sangamon County, Illinois  
2030 Land Use Forecast Summary

Dear Mr. Dixon,

Per your request CBB has developed 2030 land use forecasts for the Springfield/Chatham Planning Area<sup>1</sup> as part of the South Springfield Growth Study. These forecasts will be used in the travel demand model that is currently under development. A summary of the assumptions and methodology used to develop these forecasts is provided in the following.

### Existing (2003) Land Use Data

Due to the availability of 2000 census data, we used 2000 as our base land use model. The Census Transportation Planning Package (CTPP 2000) was used to extract year 2000 land use data by Travel Analysis Zones (TAZ) for the Springfield travel demand model. For the most part, our TAZ boundaries are consistent with those of the census data making it easy to extract data for households and retail/non-retail employment. Aerial photography was used to further refine census data where required.

Once the base 2000 data was set, we needed to account for residential and commercial development that occurred between 2000 and 2003. 2003 is being used as our "existing conditions" scenario due to the availability of IDOT traffic counts for model calibration. Residential growth for the period 2000-2003 was obtained from building permits as provided by the Springfield Sangamon County Regional Planning Commission (SSCRPC). Employment growth for the period 2000-2003 was obtained from the Springfield & Sangamon County Economic Development Council website as well as interviews with University at Illinois and Lincoln Land Community College staff.

<sup>1</sup> Area used in the travel demand model

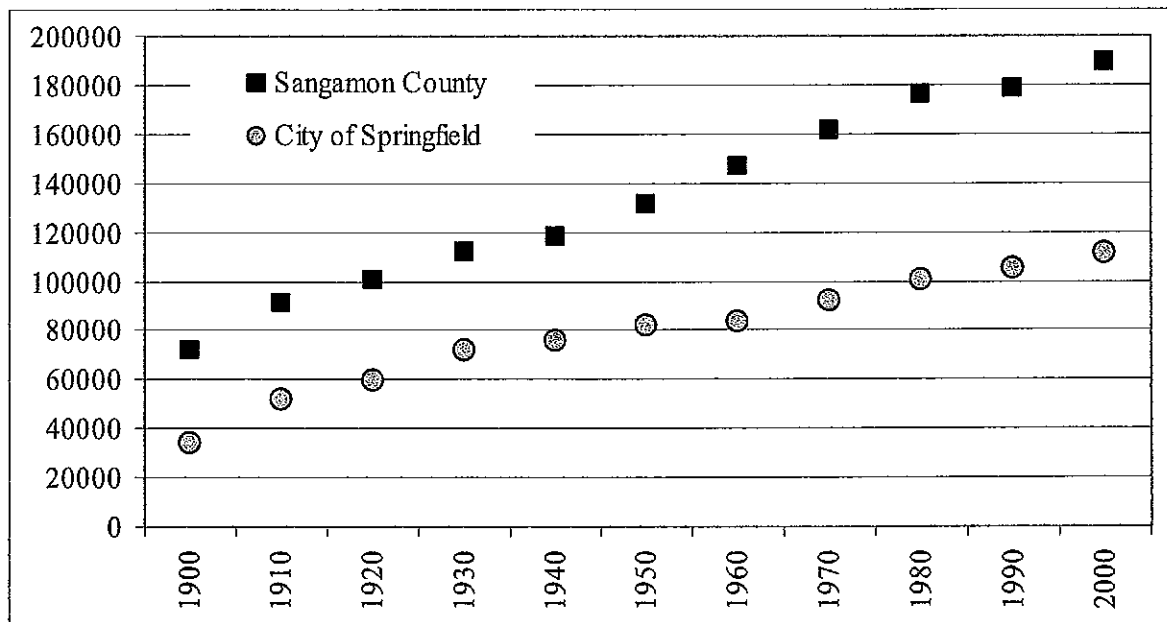
### 2030 Land Use Growth Forecasts

To begin the process of forecasting 2030 conditions, CBB obtained historical population data for the Springfield Area Townships, the Chatham area, and Sangamon County from SSCRPC. We used this data to review historical population trends as shown Table 1 and Figures 1 and 2.

Table 1: Historical Population Trends<sup>2</sup>

	Population (Springfield Area Townships <sup>3</sup> and Chatham)	% Change	Population (Sangamon County)	% Change
1970	128,128	-	161,335	-
1980	131,747	3 %	176,089	9 %
1990	133,770	2 %	178,386	1 %
2000	139,812	5 %	188,951	6 %

Figure 1: Historical Population for the City of Springfield and Sangamon County



<sup>2</sup> Prepared by Springfield Sangamon County Regional Planning Commission, Source: 2000 U.S. Census

<sup>3</sup> Capital Township, Springfield Township and Woodside Township

Figure 2: Historical and Forecasted Population of the Village of Chatham

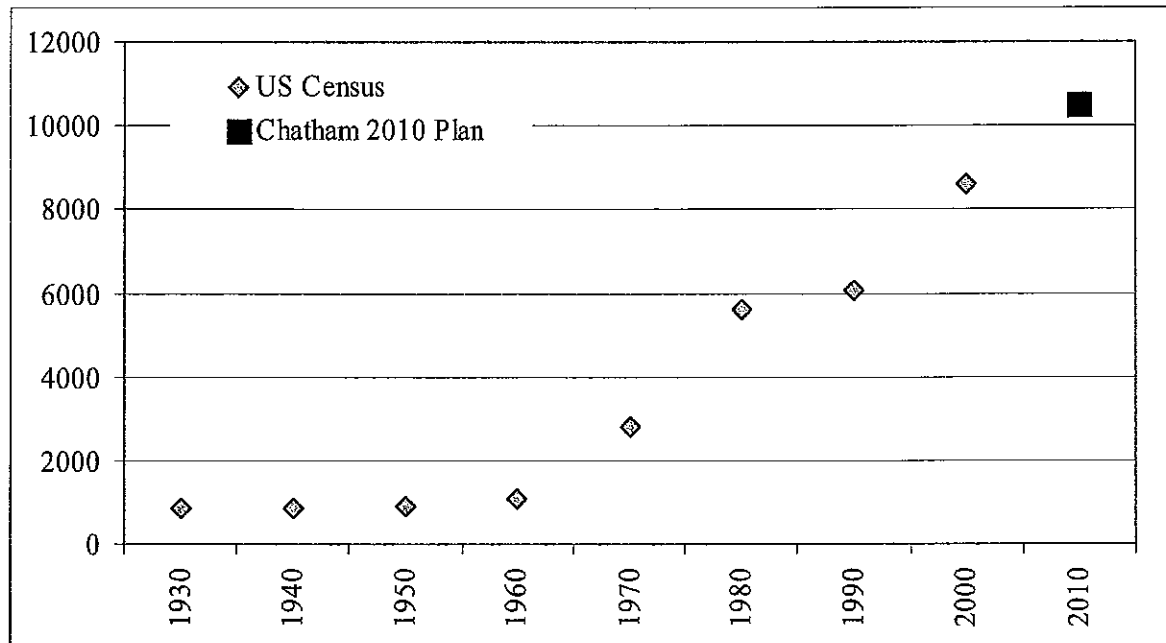


Table 1 shows that the combined population of the Springfield and Chatham area grew by about 5% between 1990 and 2000. Based on discussions with the SSCRPC staff, a growth rate of 5% every 10 years was agreed upon in order to develop future population and employment projections. An average household size of 2.35 (obtained from the 2000 US Census) was assumed to develop household projections.

The household and employment data for the year 2000 was extracted for the Springfield/Chatham Planning Area from the CTPP 2000. The area covered by the Springfield/Chatham Planning Area is shown in Exhibit 1, and the demographic projections for this area are shown in Table 2. Based on this data a total growth of 9,470 households and 14,515 employees was projected for the period 2003-2030.

Table 2: Demographic Projections for the Springfield/Chatham Planning Area

	Population	Households	Employment
<b>2000</b>	159,800	68,000	106,700
<b>2003</b>	162,740	69,250	109,000
<b>2010</b>	167,790	71,400	112,035
<b>2020</b>	176,180	74,970	117,635
<b>2030</b>	184,990	78,720	123,515
<b>2000-2030 growth</b>	25,190	10,720	16,815
<b>2003-2030 growth</b>	22,255	9,470	14,515



## **Growth Allocation Methodology**

Based on their experience and knowledge of the local area, SSCRPC staff identified residential and commercial areas that are most likely to develop during the period of 2005-2030. Anticipated residential growth areas cover approximately 8180 acres whereas commercial growth areas cover about 2950 acres. Because these areas are greater than what would be expected to develop based on the employment and household forecasts shown in Table 2, partial development of the growth areas was assumed. The allocation of households and employment to these areas is discussed in the following sections.

### **Household Growth Allocation**

Based on discussions with the Village of Chatham officials, Chatham was assumed to experience a population growth of 7,000 (corresponding to a household growth of 3,000) by 2030. The remaining total residential growth was allocated in proportion to their acreage and housing densities as specified in the Springfield 2020 land use plan map. This resulted in a housing density of 0.75 home/acre for 'low density residential' areas and about 1.5 homes/acres for 'mixed density residential' areas. The Springfield 2020 Comprehensive Plan specifies a density of 3-5 housing units per acre for low density residential areas and 7-8 housing units per acre for mixed density residential areas. The Chatham 2010 Comprehensive Plan specifies a density of 1-5 housing units per acre for low density residential areas and 5-12 housing units per acre for mixed density residential areas. The housing densities resulting from our forecasts assume about a 20% build-out of the areas identified by SSCRPC. The 2003-2030 anticipated residential growth is shown in Exhibit 2.

### **Employment Growth Allocation**

Anticipated employment growth from developments expected to be completed in 2004-2005 were accounted for in addition to the employment growth areas identified by SSCRPC. The data pertaining to these developments was obtained from the Springfield and Sangamon County Economic Development Council website. The employment growths for these developments were estimated using the available square footage data and applying typical employment densities for the appropriate employment types obtained from the ITE Trip Generation Manual (7<sup>th</sup> Edition). The new developments are expected to account for an additional 1,675 employees. The available data along with the employment estimates are summarized in Table 3.

The remaining 12,840 employment growth was allocated to the anticipated commercial growth areas in proportion to the commercial development densities specified in the Springfield 2020 land use map. A higher proportion of jobs were allocated to the 'heavy commercial' areas than the 'commercial' areas. The commercial development would represent a 30% build-out of commercial areas. The 2003-2030 employment growth is shown in Exhibit 3.

Table 3: Anticipated Development Data and Employment Estimates

Land Use	Size of Development	New Employees
Abraham Lincoln Presidential Library	16,000 sq.ft.	50
Illinois Air National Guard (at Airport)	45,000 sq.ft.	0 <sup>4</sup>
Hilton Garden Inn (Dirksen Parkway)	5,000 sq.ft. meeting space	75
University of Illinois at Springfield	125,175 sq.ft building	200
Illinois Supreme Court Building	43,000 sq.ft.	100
Wells Fargo Home Mortgage	185,000 sq.ft.	750
Internal Revenue Service	31,000 sq.ft.	150
CCB Credit Services	50,000 sq.ft	350
<b>Total</b>	<b>-</b>	<b>1,675</b>

### **Lincoln Land Community College (LLCC) and University of Illinois, Springfield (UIS) Student Growth Allocation**

The last updated travel demand model does not explicitly account for trips made by college students. In the current (2003) model, these trips are accounted for by introducing the 'Home-Based College' trip purpose. The number of college students by TAZ was obtained from the CTPP 2000. The student population is distributed throughout the Springfield/Chatham Planning Area; about 20% of these students live within a 3 mile radius from college. Current student enrollment data and the anticipated enrollment growth were obtained through interviews with the LLCC and UIS staff.

Lincoln Land Community College currently has 7,000 full-time students; historical annual growth rate in student enrollment has been 3% whereas the target growth rate is 4%<sup>5</sup>. Based on historical data and College growth goals, we project the student enrollment in 2030 to be about 12,670. University of Illinois, Springfield currently has 4,500 students; the historical annual growth rate in student enrollment has been 3%<sup>6</sup>. Again based on historical rates and University growth goals, we project approximately a student enrollment of 8,145 in 2030. Therefore, it is anticipated that there will be an additional 9,315 students in the Springfield area by 2030. We have distributed these new students throughout the Springfield/Chatham Planning Area in the same proportion as the existing student population.

<sup>4</sup> Replacement of existing facility

<sup>5</sup> Interview with LLCC staff, May 2004

<sup>6</sup> Interview with UIS staff, May 2004

Exhibit 1: Springfield/Chatham Planning Area TAZ Structure







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## **APPENDIX C – Travel Demand Study (June 2005)**

**TRAVEL DEMAND STUDY  
SOUTH GROWTH AREA**

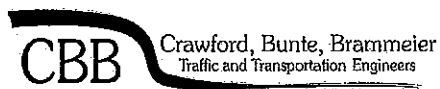
ILLINOIS TOMORROW CORRIDOR PLANNING GRANT PROGRAM FOR FISCAL YEAR 2002

**SPONSOR:** SANGAMON COUNTY, ILLINOIS

**MPO:** SPRINGFIELD-SANGAMON COUNTY REGIONAL PLANNING COMMISSION

**PREPARED BY:** Crawford, Bunte, Brammeier  
3301 Constitution Drive  
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**JUNE 2005**

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## 1. INTRODUCTION

The Springfield-Chatham area in Sangamon County, IL has experienced considerable growth in the last few decades and is anticipated to experience similar growth patterns in the future. Land use growth is associated with increasing demands on the transportation system. The 'Illinois Tomorrow' program was initiated with the objectives of reducing traffic congestion, preserving open space, encouraging reinvestment and redevelopment, enhancing the quality of life, and encouraging local government partnership in Illinois. As part of the Illinois Tomorrow initiative, the Corridor Planning Grant Program was created to help local governments develop land use and infrastructure plans that promote the efficient use of transportation facilities and enhance quality of life<sup>1</sup>. This project is part of the Corridor Grant Program for the southern part of Springfield, known as the 'South Growth Area', shown in Figure 1. The Study Area for this project is roughly bounded by I-55/Lake Springfield to the East, CH 18 to the West, Iles Ave to the North and Covered Bridge Road to the South.

The South Growth Area is anticipated to experience significant growth in future, which could lead to increased congestion on the existing roadway network. In this study, the region's travel demand model was updated to 2003 conditions and a partial calibration was conducted so that the model could be used to identify the impacts of several arterial extensions in the South Growth Area.

As an initial step in the process, the regional model was converted from TRANPLAN to the Cube/Voyager platform. The 2003 land use and traffic count information was then gathered and inputted into the model, followed by model calibration and validation. The 2030 future land use information was assembled with the assistance of the Springfield-Sangamon County Regional Planning Commission. The land use forecasts, along with the committed roadway network information, were used to develop the 2030 No Build Model forecasts. This was followed by alternatives analysis. The entire process was performed with the assistance of input received through coordination meetings with the Technical Advisory Committee.

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<sup>1</sup> <http://www.dot.state.il.us/corridorplanning/corridor.html>

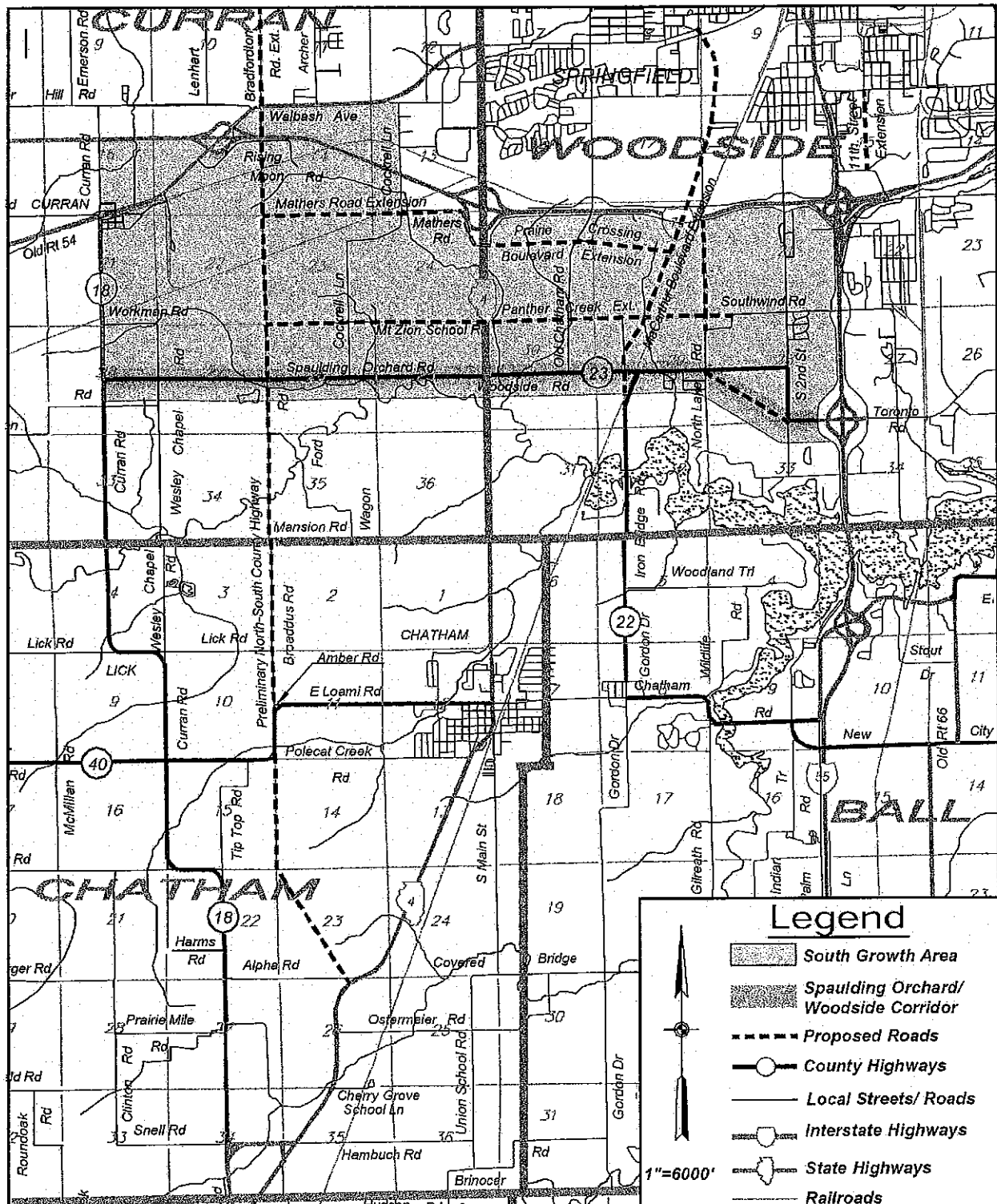


Figure 1: South Growth Study Area (Source: CMT)

## 2. EXISTING TRANSPORTATION SYSTEM

### Roadway Functional Classification

The existing transportation system can be described by its functional classification, which is the grouping of streets and highways into classes based on the character of service they provide. Although the higher classified roadways generally carry higher traffic volumes, roadways are classified by the function they serve and not by the amount of traffic they carry.

The roadway functional classification system map for the city of Springfield was provided by Illinois Department of Transportation (IDOT). According to the system, there exist seven categories for the roadway functional classification, namely interstate, freeways/expressway, major arterials, minor arterials (urban/non-urban), major collector, minor collectors and local streets (urban/non-urban). Exhibit 1 shows the functional classification of roadways in the study area.

### Traffic Volumes

Traffic count data provide an indication of each roadway's relative loadings and are used to identify deficiencies and develop appropriate improvements. Traffic volume data (AADT counts) for the year 2003 on several roadway segments and external stations in Springfield was provided by Illinois Department of Transportation (IDOT). The 2003 AADT counts for the study area are displayed in Exhibit 2. Roadway segments in the South Springfield Growth Study Area with the highest volumes are listed in Table 1.

Table 1: 2003 Highest Volume Roadway Segments

Roadway	Location	2003 AADT
I-72/I-55	East of I-55	45,900
I-55	South of I-72	40,800
I-72	West of I-55	34,200
Route 4	North of I-72	34,000
6 <sup>th</sup> Street	North of I-72	32,000
Stevenson Dr	West of 6 <sup>th</sup> Street	27,900
Wabash Avenue	East of Route 4	27,500
Chatham Road	North of Wabash Ave	22,100
Route 4	South of I-72	19,200

## Transportation System Operations

The performance of any transportation system is typically quantified by its level of traffic volume versus the total capacity of the facility or V/C ratio. A V/C ratio equal to 1.0 or greater indicates that the demand volume exceeds the available capacity of the roadway. A V/C ratio between 0.76 and 1.0 is indicative of a roadway operating with heavy congestion, whereas a V/C between 0.5-0.75 indicates minor or no congestion. V/C ratios can be used to identify areas where traffic mitigation measures should be considered.

Roadway capacity is a measure of the maximum sustained vehicular flow possible during a given time period, and is a primary factor determining the operational efficiency of a transportation system. Some common factors that determine roadway capacity are number of lanes, lane width, provision of turning lanes, on-street parking, traffic signal operations, and vertical grades. Estimates of general roadway link capacities and free-flow speeds for the travel demand model used for this study as a function of functional classification are shown in Table 2. These values were brought forward from the previous regional model and a review of their performance shows that they continue to be reasonable for use in this study.

Table 2: Roadway Link Hourly Capacities

Functional Classification	Capacity (veh/hour/lane)	Free-flow Speed (mph)
Interstate/Freeway	1,900	60-65
Major Arterial	1,100	40-45
Minor Arterial	900	30-35
Collector	600	25-30

Saturated roadway segments in the study area were identified based on the capacities defined in Table 2. Roadways with high volume to capacity ratios are shown in Table 3 and Figure 2. Figure 2 shows V/C ratios as calculated in the regional model. It should be noted that capacities are based on functional class as defined in Table 2; therefore V/C is related to the defined functional class for any specific road segment. V/C as defined in the regional model is related in some respect to the "desired" capacity of a roadway as much as to the actual field capacity of that roadway. It should be noted that according to the model, Chatham Road between I-72 and Westchester Boulevard operates under a V/C greater than 1.0 since it was coded as a minor arterial. In reality, it functions as a major arterial in terms of traffic volumes (about 15,000 vpd).

Table 3: Study Area Roadways with High Volume to Capacity Ratios

Roadway	Location	2003 V/C
6 <sup>th</sup> Street	North of I-72	>1.0
Route 4	North of I-72	>1.0
Chatham Road	North of I-72	>1.0
Wabash Ave	East of Route 4	0.95
Route 4	North of CR 40	0.85
I-55/I-72	East of I-55	0.80

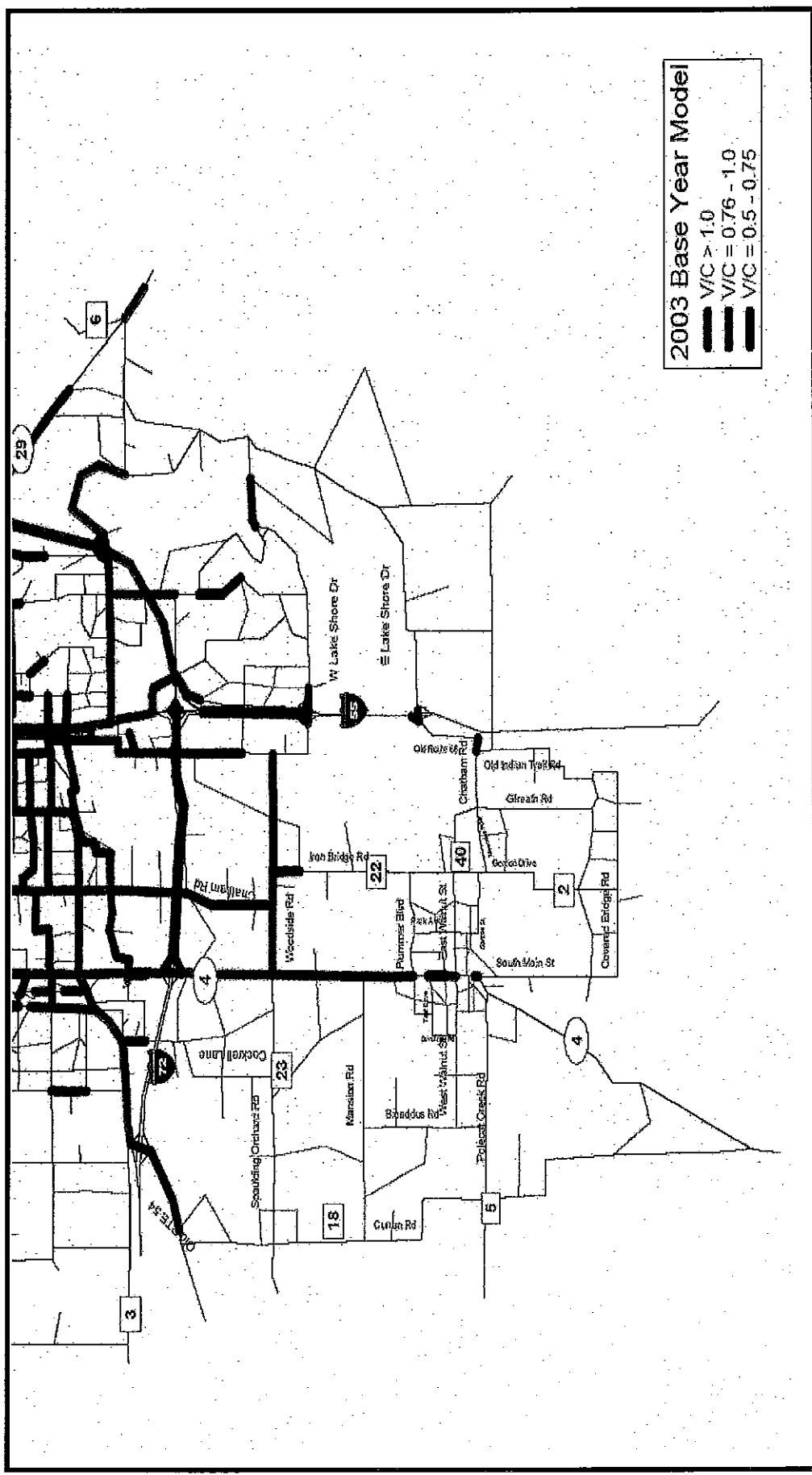


Figure 2: 2003 Study Area V/C ratio (Source: 2003 Regional Travel Demand Model)

### 3. BASE YEAR (2003) TRAVEL DEMAND MODEL DEVELOPMENT

#### Introduction

A travel demand model is a mathematical tool that estimates traffic and trip making characteristics taking into account land use data. These models are typically used to evaluate and assess the impact of changes in land use and transportation infrastructure on transportation systems. As part of the Springfield South Growth study, the Springfield travel demand model was enhanced and updated to year 2003 conditions. This involved a conversion of the earlier developed model from the TRANPLAN platform to the Cube/Voyager platform. Cube/Voyager is a state-of-the-art travel demand modeling software which offers more functionality over TRANPLAN. It needs to be noted that although the land use (population and employment) characteristics were updated for the entire model, calibration was only limited to the study area. This chapter describes the travel demand model update process.

The first step in developing a travel demand model is to define a zoning system to facilitate the incorporation of land use data and build a computerized street network. This is followed by the traditional steps of trip generation, trip distribution, mode split and trip assignment. Trip generation involves the computation of trip production and attraction ends by zone and by trip purpose based on land use data. Trip distribution involves the distribution of the zonal productions to the attractions based on their spatial separation and level of activity. In mode split, the trips are split into travel modes. In trip assignment, trips from origins to destinations are loaded onto the transportation network by selecting the shortest path in terms of a measure of travel cost. Finally, the parameters of the model are calibrated to obtain link volumes that replicate existing ground counts resulting in a validated model. These steps are described in detail in the following sections.

#### Model Development

A travel demand model in Cube/Voyager is primarily defined by the transportation network, land use data broken down by traffic analysis zones and the model scripts. The development of each of these components for the Springfield model is described in the following sections.

#### *Traffic Analysis Zones*

For the purpose of travel demand modeling, the modeled region is divided into smaller geographical units called traffic analysis zones (TAZ). Each TAZ represent an aggregation of land use data within the area. TAZs are considered to be the origin and destination of travel activity. TAZ boundaries are in general consistent with census tract boundaries and should not cross major physical and transportation barriers. In a travel demand model, trips are considered to originate from a TAZ from its geographical center, known as a centroid. The previously updated Springfield model originally had 236 internal TAZs and 21 external stations (where traffic enters and leaves the model area). The TAZ structure was expanded to include the area roughly bounded by the 2003 Springfield Urban Area. The revised TAZ structure for the Springfield Chatham Planning Area, comprising of 280 internal TAZs and 19 external stations, is



shown in Figure 3. The previously updated model had 75 TAZs in the South Growth Area and was refined to include 110 TAZs.

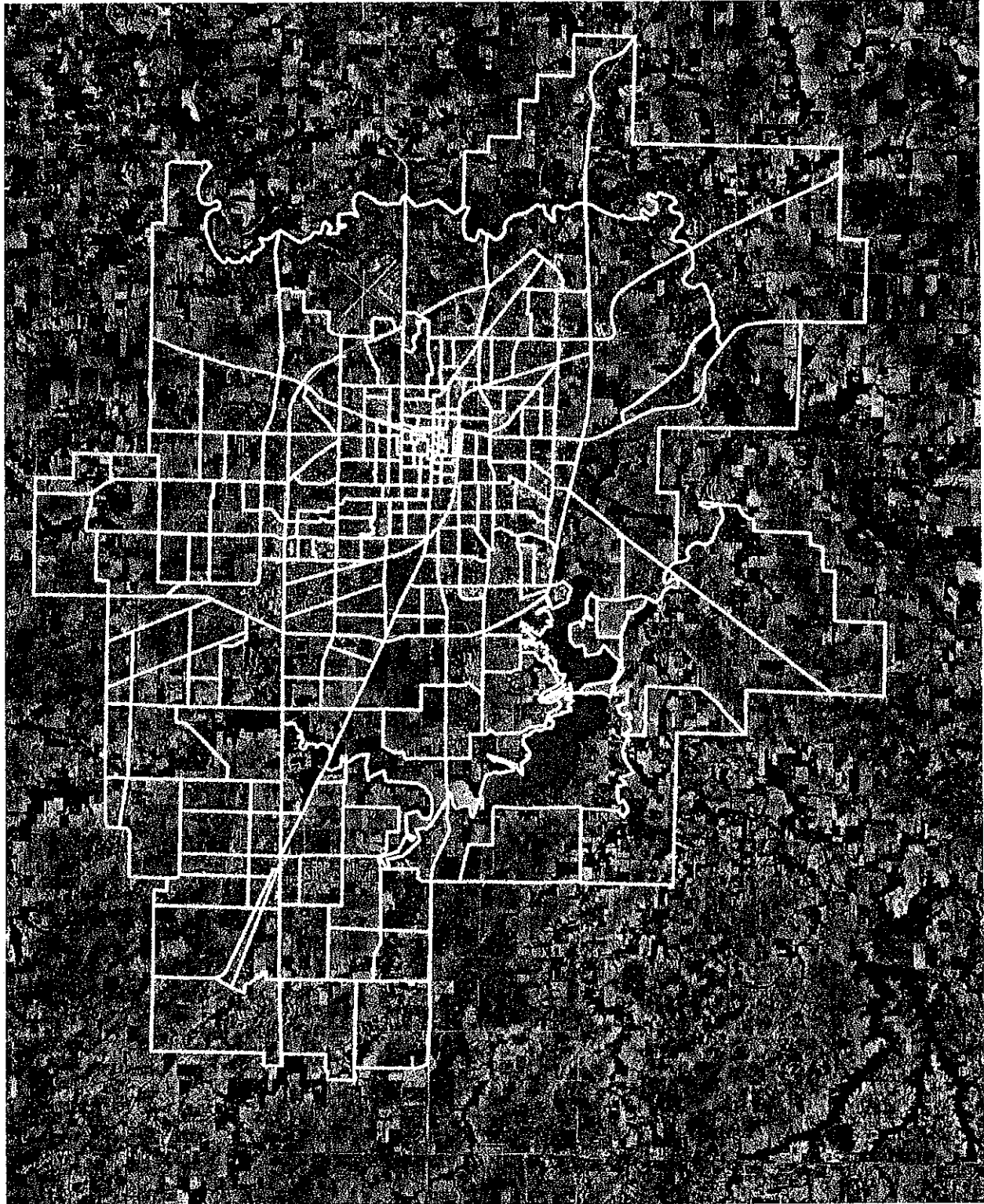


Figure 3: TAZ structure of the Springfield Chatham Planning Area

### ***Network Development***

Travel demand model networks are comprised of links (which represent street segments) and nodes (which represent intersections). The previously updated network for the Springfield Chatham area had 3339 links and 1414 nodes. The 2003 Springfield/Chatham model network was expanded to include 4103 links and 1683 nodes. The network includes all roadways in the Springfield/Chatham area classified as collectors and above based on IDOT's functional classification system. Links contain several roadway attributes such as capacity, number of lanes, speed, distance and travel time. Free-flow speeds and capacities were coded for the roadway links based on their functional classification system. The center of each TAZ is represented by a centroid, which is connected to the network through centroid connectors. The 2003 Springfield/Chatham roadway network in Cube/Voyager is shown in Figure 4.

### ***Socio-Economic Data***

Travel demand models require land use data by TAZ representative of both residential and non-residential (employment) uses. Residential land use is specified in the Springfield model in terms of households. Non-residential data is specified in terms of retail and non-retail employment. Additional land use categories of 'college students' and 'college enrollment' were introduced in the 2003 model.

Due to the availability of 2000 census data, land use data for the year 2000 was used as the base for the socioeconomic data to be used in the Springfield travel demand model. The Census Transportation Planning Package (CTPP 2000) was used to extract year 2000 land use data by Traffic Analysis Zones (TAZ) for the model. For the most part, our TAZ boundaries are consistent with those of the census data making it easy to extract data for households and retail/non-retail employment. Aerial photography was used to further refine census data where required.

Once the base 2000 data was set, we needed to account for residential and commercial development that occurred between 2000 and 2003. 2003 is being used as our "existing conditions" scenario due to the availability of 2003 IDOT traffic counts for model calibration. Residential growth for the period 2000-2003 was obtained from building permits as provided by the Springfield Sangamon County Regional Planning Commission (SSCRPC). Employment growth for the period 2000-2003 was obtained from the Springfield & Sangamon County Economic Development Council website as well as interviews with University at Illinois and Lincoln Land Community College staff.

A summary of the 2003 socioeconomic data for the Springfield-Chatham Planning Area is provided in Table 4. 2003 Households and Employment by TAZ are shown in Exhibits 3 and 4.

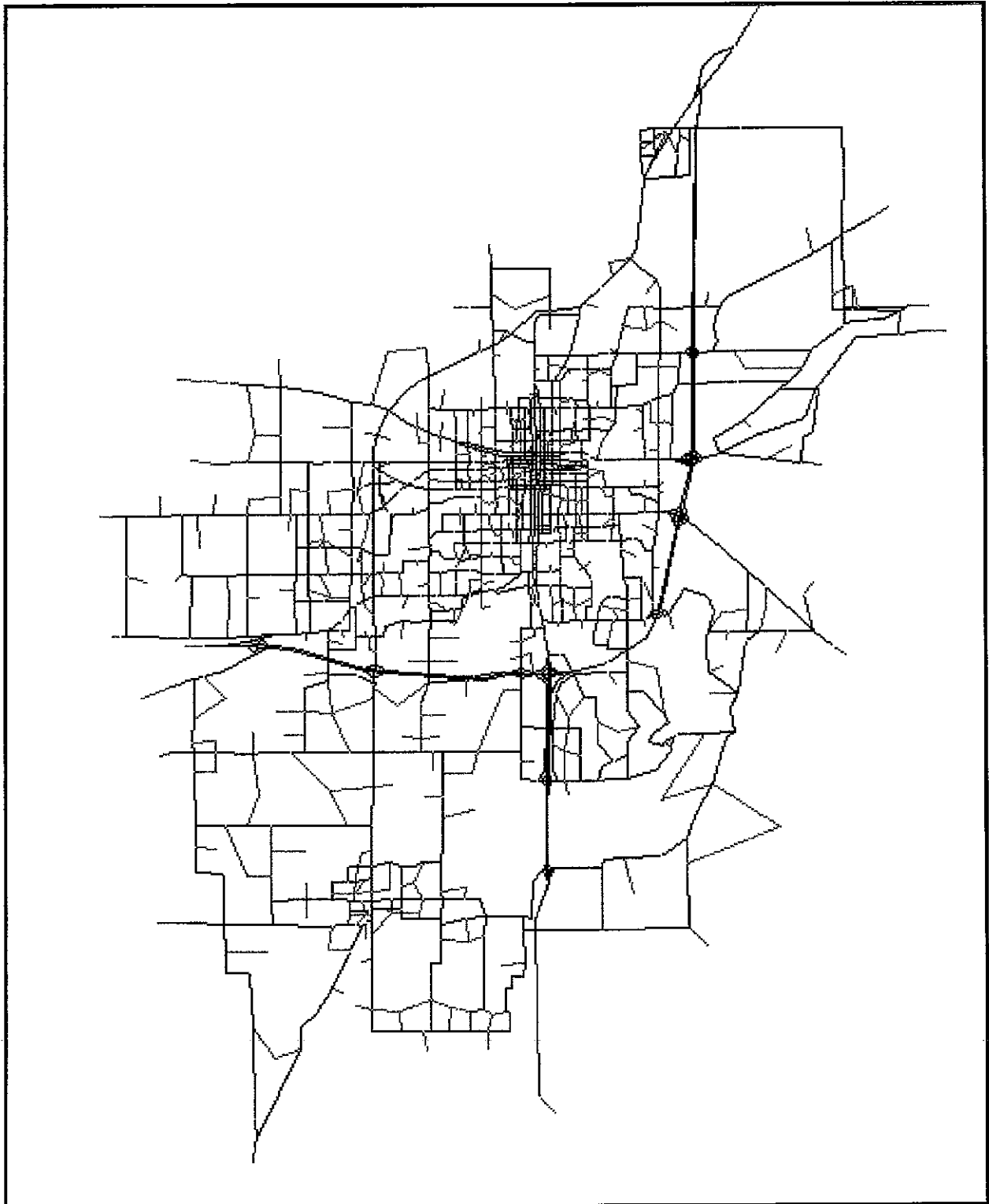


Figure 4: 2003 Springfield Chatham Area Travel Demand Model Network (Source: 2003 Regional Travel Demand Model)

Table 4: 2003 Socioeconomic data for the Springfield-Chatham Planning Area

<b>Population</b>	<b>Households</b>	<b>Retail Employment</b>	<b>Non-Retail Employment</b>	<b>Total Employment</b>	<b>College Student Enrolment</b>
162,740	69,250	11,010	97,970	108,980	11,500

### Trip Generation

Trip generation is performed by applying trip production and attraction rates to the land use data in each TAZ. A trip production is defined as the home end of a trip and a trip attraction is the non-home end of a trip. The trips in the model are stratified as Home-Based Work, Home-Based Other, Non-Home-Based and Home-Based College, External-Internal/Internal-External and External-External (or through) trips purposes. Home-Based Work trips include all those trips made for the purpose of work, beginning or ending at the trip maker's home. Home-Based Other trips are those trips with one end at the home, other than for the purpose of work. Non-Home Based trips neither begin nor end at home. External-Internal/Internal/External trips include those trips that have one end outside the model area. External-External (or Through) trips begin and end outside the model area but passes through it. The trip generation rates in the regional model was used as a starting point and adjusted during the calibration process. The final trip production and attraction equations are shown in Table 5.

Table 5: Trip Production and Attraction Equations used in Trip Generation

<b>Purpose</b>	<b>Zonal Productions</b>	<b>Zonal Attractions</b>
Home-Based Work	2.15 * Households	1.45* Total Employment
Home-Based Other	6* Households	1* Households + 10.5* Retail Employment + 0.7* Non-Retail
Non-Home Based	0.5* Households + 2* Retail Employment + 1.5* Non-Retail Employment	0.45* Households + 1.7* Retail Employment + 1.2* Non-Retail Employment
Home-Based College	0.7* Students	0.7* Enrolment
External-Internal	External Productions	1.45* Total Employment

The production ends of external-internal trips were estimated based on the AADT at the external stations and using NCHRP 365 methodology.

The final daily vehicle trip rates, shown in Table 6 are consistent with those presented in NCHRP 365<sup>2</sup>.

<sup>2</sup> NCHRP Report 365, Travel Estimation Techniques for Urban Planning

Table 6: Daily Vehicle Trip Generation Rates

Variable	Production Rate	Attraction Rate
Household	8.65	1.45
College Students	0.7	0.7
Retail Employment	2.0	12.2
Non-Retail Employment	1.5	1.9
Total Employment	0 <sup>3</sup>	1.45

Application of the above production and attraction rates to the land use data by TAZ resulted in productions and attraction trip ends by TAZ and by trip purpose. Productions were scaled in such a way that total productions matched total attractions. The results of the trip generation was checked for reasonableness by comparing the mean vehicle trips per household and the percent person trips by trip purpose with those specified in NCHRP 365. These comparisons, summarized in Tables 7 and 8, show that the trip generation results are reasonable.

Table 7: Percentage Person Trips by Purpose

	2003 model	NCHRP 365	National Surveys <sup>4</sup>
Home-Based Work	20	20	15-21
Home-Based Other	47	57	44-57
Non Home-Based	32	23	27-35
Home Based College	1	-	-

Table 8: Mean Vehicle Trips per Household

	2003 model	NCHRP 365	National Surveys
Mean trips per household	8.36	8.1	7-11

### Trip Distribution

The trips produced in each TAZ are distributed to other TAZs in direct proportion to their relative attractiveness and in inverse proportion to their accessibility, which is the premise of the commonly used gravity model. The general formulation of a gravity model is:

<sup>3</sup> Trip production rates by employment are applicable only to Non-Home Based (NHB) trip purpose. NHB production rates were applied separately by retail and non-retail employment and therefore did not require a 'total employment' production rate

<sup>4</sup> TCRP Report 73, Characteristics of Urban Travel Demand

$$T_{ij} = P_i \left( \frac{A_j F_{ij}}{\sum_{k=1}^{\text{zones}} A_k F_{ik}} \right)$$

where

$T_{ij}$  = number of trips from zone i to zone j

$P_i$  = number of trip productions in zone i

$A_j$  = number of trip attractions in zone j

$F_{ij}$  = friction factor relating the spatial separation between zone i and zone j

Accessibility between zones is measured through the friction factor, which is a function of interzonal travel time. Friction factors by purpose were developed in 1 minute increments and are of the form

$$F = a/t^n,$$

Where  $F$  is the friction factor,  $t$  is the interzonal travel time and  $a$  and  $n$  are constants. The following values of  $n$  were used:

Home-Based Work	0.9
Home-Based Other	2.6
Non-Home Based	2.68
Home-Based College	2.6

The value 10,000 was used for  $a$ . The friction factors were brought forward from the previous regional model and a review of their performance shows that they continue to be reasonable for use in this study.

Free-flow travel time from each zone to every other zone is computed along the shortest path routes. Terminal times (on the centroid connectors) are added to the free-flow travel times to obtain total inter-zonal travel times. Terminal times (time required to park/walk to complete a trip) of 5 minutes were applied to each end of trips in the Springfield CBD or outlying areas and 3 minutes to trip ends in zones that lie in the intermediate areas. These are based on NCHRP 365, which specifies terminal times based on area type.

Application of trip distribution resulted in a production-attraction matrix. Two types of reasonableness checks were performed at the end of this step, namely the computation of the mean trip lengths by purpose and the trip length frequency distribution. Actual mean trip length for Home-Based Work was obtained from the Census Transportation Planning Package (CTPP) 2000. According to NCHRP 365, mean trip lengths for Home-Based Other and Non Home-Based trips are about 75-85% of that for Home-Based Work trips. Actual trip length frequency distribution for Home-Based Work trips was derived from the CTPP 2000.

The friction factor parameter  $n$  for Home-Based Work trip purpose required minor adjustment to produce a good match between model and actual mean trip length and trip length frequency distribution for this trip purpose. The final mean model trip lengths for Home-Based Work, Home-Based Other and Non-Home Based trips are summarized in Table 9 along with their actual (or derived) values.

Table 9: Mean Trip Lengths (minutes) by Purpose

	2003 model	Actual (CTPP/Derived)
Home-Based Work	15.1	16 <sup>5</sup>
Home-Based Other	13.1	12-13.5 <sup>6</sup>
Non Home-Based	13	12-13.5 <sup>5</sup>
Home Based College	17.4	-

The actual vs model trip length frequency distributions for Home-Based trips are shown in Figure 5. It can be seen that there is close correspondence between the two curves.

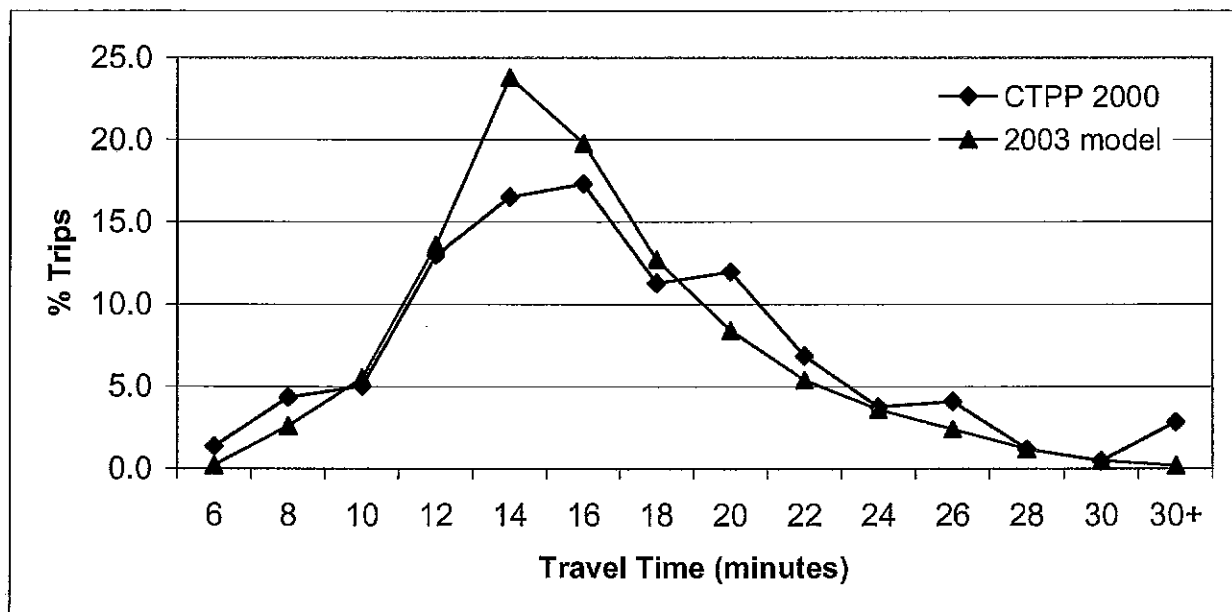


Figure 5: Trip Length Frequency Distribution for Home-Based Work Trips

The model trip length frequency distributions for all the purposes are shown in Figure 6. These results are reasonable since there is more willingness to make longer trips for work than for other purposes like shopping, etc. Moreover, there is more willingness to make shorter trips than longer ones for any purpose. The unusual shape of the college trips are due to the fact that the

<sup>5</sup> Census Transportation Planning Package (CTPP) 2000

<sup>6</sup> NCHRP Report 365, Travel Estimation Techniques for Urban Planning

Universities (University of Illinois at Springfield and Lincoln Land Community College) are located almost at the southeast corner of Springfield, whereas the residential locations of the students are distributed throughout the Springfield area.

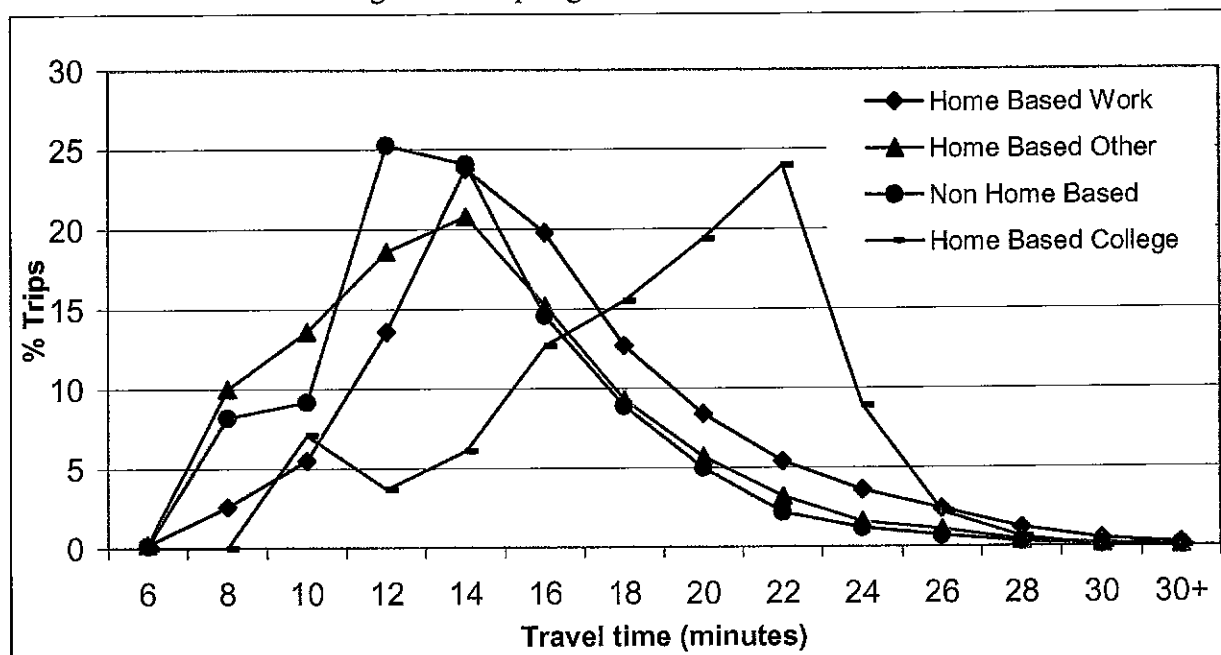


Figure 6: Trip Length Frequency Distributions for all Trip Purposes

### External Trips

External trips are a significant component of traffic in any urban area. There are three types of external trips: Internal-External or External-Internal which have one trip end inside and one outside the study area and External-External trips, which pass through the study area without making a stop. External-Internal trips as well as the External-External trip table for the 4 external stations were determined based on the NCHRP 365 methodology. According to this methodology, the percent through trips at each external station are calculated based on the functional classification of the roadway, the ADT, percentage of trucks, percentage of vans and pickups at the external station and the population of the study area. This can be represented by the following equation:

$$Y_i = 76.76 + 11.22 * I - 25.74 * PA - 42.18 * MA + 0.00012 * ADT_i + 0.59 * PTKS_i - 0.48 * PPS_i - 0.000417 * POP$$

where

- $Y_i$  = percentage of the ADT at external station  $i$ , that are through trips,
- $I$  = interstate (0 or 1)
- $PA$  = principal arterial (0 or 1)
- $MA$  = minor arterial (0 or 1)
- $ADT_i$  = average daily traffic at external station  $i$ ,
- $PTKS_i$  = percentage of trucks excluding vans and pickup at external station  $i$ ,
- $PPS_i$  = percentage of vans and pickups at external station  $i$ , and
- $POP$  = population inside the cordon area.



For I-72 East and West, values of PTKS and PPS of 8% and 5% were used whereas for I-55 North and South, values of PTKS and PPS of 12% and 10% were used. These values were determined as part of the previous model update and was considered reasonable for this study.

Trips were distributed from each external origin station to each of the other external destination stations based on the functional classification of the destination station, route connectivity between the stations and the fraction of the ADT of a destination station over the total ADT of all the destination stations. This can be represented by the following equations:

Interstate:

$$Y_{ij} = -2.7 + 0.21 * PTTDES_j + 67.86 * RTECON_{ij}$$

Principal Arterial:

$$Y_{ij} = -7.4 + 0.55 * PTTDES_j + 24.68 * RTECON_{ij} + 45.62 * \frac{ADT_j}{\sum_{j=1}^n ADT_j}$$

Minor Arterial:

$$Y_{ij} = -0.63 + 86.68 * \frac{ADT_j}{\sum_{j=1}^n ADT_j} + 30.04 * RTECON_{ij}$$

where

$Y_{ij}$  = percentage distribution of through trip-ends from origin station i to destination j

$PTTDES_j$  = percentage through trip-ends at destination station j

$RTECON_{ij}$  = route continuity between stations i and j; 1=Yes, 0=No

$ADT_j$  = average daily traffic at the destination station j

Even though there are 19 external stations, negligible traffic was assumed to contribute to external-external trips on 15 stations which had relatively low traffic volumes. In other words, all the traffic at these stations were assumed to be External-Internal or Internal-External trips. The resulting through trip table for the remaining 4 stations is shown in Table 10.

Table 10: Through Trip Table

Station From/To	281	284	287	292
281	0	570	940	710
284	570	0	525	6145
287	940	525	0	655
292	710	6145	655	0

Stations:     281: I-72 East  
                  284: I-55 South  
                  287: I-72 West  
                  292: I-55 North

## Trip Assignment

An Origin-Destination (O-D) matrix was created through the trip distribution process. The O-D matrix was assigned to the network using an equilibrium capacity restrained technique, which is an iterative process that takes into account the delays encountered due to congestion. Equilibrium is considered to have occurred when no trip can be made by an alternate path without increasing the total travel time of all trips on the network. The inter-zonal travel times in successive iterations of an equilibrium capacity restrained assignment are adjusted based on the commonly used Bureau of Public Roads (BPR) volume-delay formula with default coefficients ( $\alpha=0.15$ ,  $\beta=4$ ). Daily link capacities were computed as 8 times hourly capacities. Application of the traffic assignment step results in link volumes.

$$T_c = T_f \left( 1 + \alpha * \left[ \frac{v}{c} \right]^\beta \right)$$

where

$T_c$  = congested link travel time  
 $T_f$  = link free-flow travel time  
 $v$  = assigned link traffic volume  
 $c$  = link capacity  
 $\alpha, \beta$  = volume/delay coefficients

## Model Calibration and Validation

Model calibration is the process of adjustment of the model's parameters to more closely match field conditions. The goal of travel demand model validation is to ensure that trip rates, lengths, and etc match field data and to obtain link volumes that replicate traffic counts observed in the field. It should be noted that for this study only the portion of the model network in the South Growth Study Area was validated to ground counts. Overall, prior to the calibration effort the link volumes in the Springfield model network for the South Growth Area were not significantly far from the counts. However, as would be expected, there were several individual links on which a high percentage of error in volume was observed. This required calibration of the model's parameters. Preliminary calibration was performed after trip generation and trip distribution. Since the trip generation model resulted in higher mean trips per household than expected for a city of the size of Springfield, the parameters in the trip generation model (trip production and attraction rates) were adjusted to provide suitable results. This resulted in trip production and attraction rates that are more consistent with those specified in NCHRP 365 and are shown in Table 7. The trip distribution parameters also required calibration (adjustment of friction factors) to bring the mean model trip lengths closer to the actual trip lengths and the model trip length frequency distribution closer to the actual trip length frequency distribution. Finally, local calibration of the model's network in the South Growth Study Area was needed to obtain a closer match between model link volumes and ground counts. This involved minor adjustment to link speeds to more closely match field link speeds and the adjustment of the

location of some centroid connectors to reflect more realistic access points. It is worth mentioning that the capacity of Business 55 between I-72 and Stevenson Drive was reduced by about 30% to reflect the true field capacity.

Nine screen line locations were identified for model validation and are shown in Figure 7. The percent error (after model calibration) in the volumes on links that cross these screen lines are shown in Table 11. The results judged by screen line volumes alone show the model performing 2.2 % below traffic volumes measured in the field. This is well within the 10% threshold specified by FHWA.

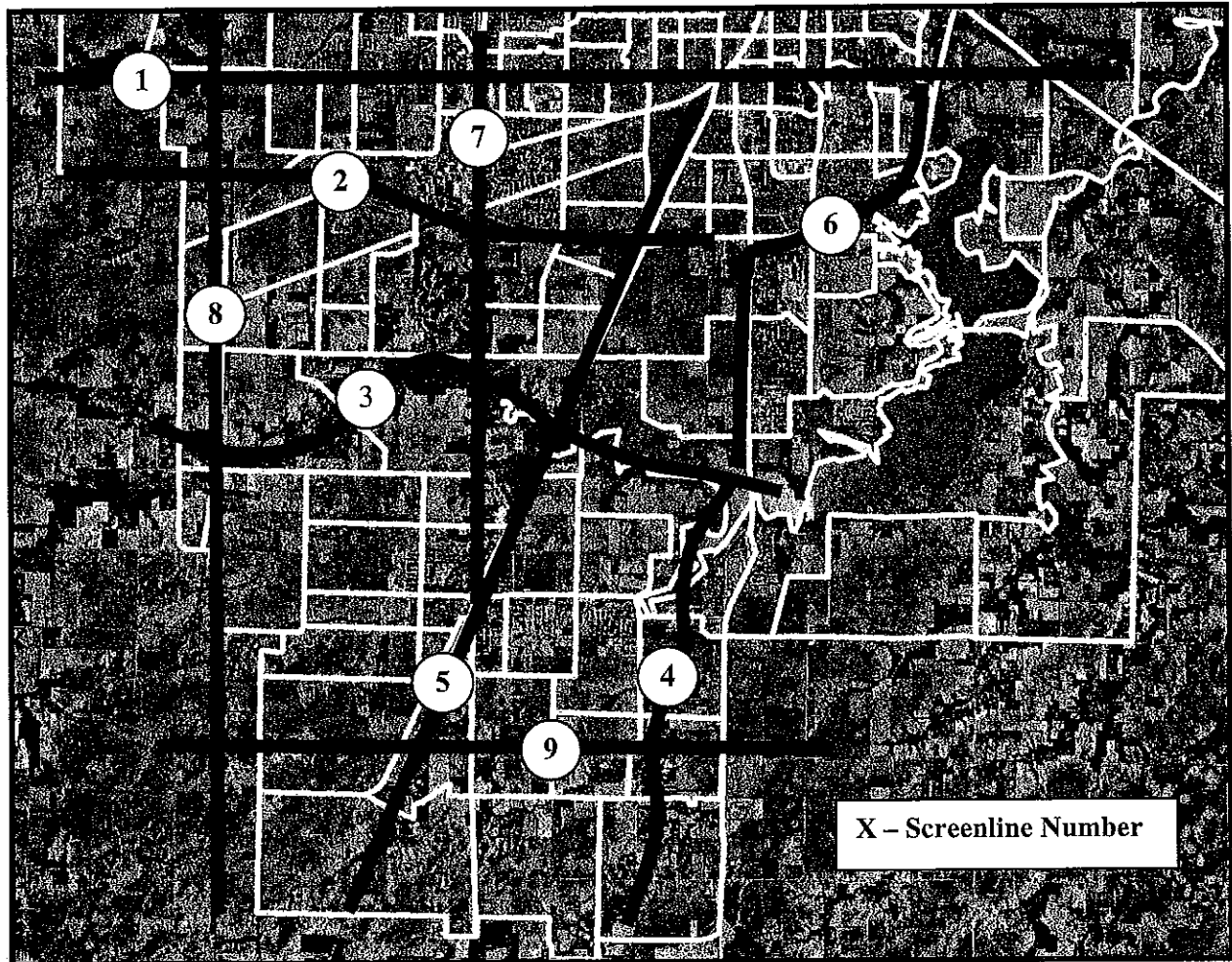


Figure 7: Screenline Locations

**Table 11: Aggregate Percent Error in Daily Volumes by Screenline**

Screenline #	Screenline Name	Total Counts	Model Volumes	% Diff	FHWA %
1	East-West (North Side of Study Area)	205,900	205,296	-0.3	+/-19
2	I-72	41,450	41,160	-0.7	+/-34
3	Creek:Chatham-Springfield via Arterials	46,700	47,422	1.5	+/-31
4	Creek: Chatham-Springfield via I-55	9,550	9,734	1.9	+/-60
5	Union Pacific RR: East-West Traffic	11,350	10,957	-3.5	+/-58
6	I-55/Campus	45,350	48,945	7.9	+/-30
7	Route 4	145,450	132,215	-9.1	+/-20
8	North-South (West Side of Study Area)	23,925	23,342	-2.4	+/-45
9	East-West (South Side of Study Area)	43,050	40,965	-4.8	+/-32
	Total			-2.2	+/-10

The percent error in link volumes by functional class is shown in Table 12 and that by volume group is shown in Table 13.

Overall, the model underestimates the link volumes by about 0.8 %. The Root Mean Squared % error for model links in the South Growth Area is 23.2% which is within the FHWA threshold of 30%. In summary, the model was validated to have a good degree of accuracy as per industry standards and thus can be used as a reliable tool to forecast future traffic volumes.

**Table 12: Aggregate Percent Error in Daily Volumes by Functional Class**

Functional Class	% Error	FHWA %
Freeways	2.9	+/-7
Major Arterial	2.3	+/-10
Min Arterial	-3.7	+/-15
Collector	-5.2	+/-25

**Table 13: Aggregate Percent Error in Daily Volumes by Volume Group**

Volume group	% Error	FHWA %
<1000	-37.3	+/-60
1000-2500	-16.5	+/-47
2500-5000	-7.8	+/-36
5000-10000	-5.6	+/-29
10000-25000	2.4	+/-25
25000-50000	0.6	+/-22
Total	-0.8	+/-5

## 4. FUTURE LAND USE

Future travel demand is determined by future land use and demographic characteristics. Land use forecasts for this project were determined using historical growth rates and the future land use map for the Springfield Area along with discussions with the SSCRPC staff for identifying areas for potential growth. Although one cannot precisely predict exactly where and how much of any one type of development will actually occur, this methodology can be used as a reasonable approach to develop land use forecasts for corridor planning studies. Since the travel demand model requires land use projections by TAZ, the total projections were broken down by TAZ. A summary of the assumptions and methodology used to develop the 2030 future land use forecasts for this study is provided in this chapter.

### 2030 Land Use Growth Forecasts

To begin the process of forecasting 2030 conditions, CBB obtained historical population data for the Springfield Area Townships, the Chatham area, and Sangamon County from SSCRPC. This data was used to review historical population trends as shown in Table 14 and Figures 8 and 9.

Table 14: Historical Population Trends<sup>7</sup>

	<b>Population (Springfield Area Townships<sup>8</sup> and Chatham)</b>	<b>% Change</b>	<b>Population (Sangamon County)</b>	<b>% Change</b>
<b>1970</b>	128,128	-	161,335	-
<b>1980</b>	131,747	3 %	176,089	9 %
<b>1990</b>	133,770	2 %	178,386	1 %
<b>2000</b>	139,812	5 %	188,951	6 %

Table 15 shows that the combined population of the Springfield and Chatham area grew by about 5% between 1990 and 2000. Based on discussions with the SSCRPC staff, a growth rate of 5% every 10 years was agreed upon in order to develop future population and employment projections. An average household size of 2.35 (obtained from the 2000 US Census) was assumed to develop household projections.

The household and employment data for the year 2000 was extracted for the Springfield/Chatham Planning Area from the CTPP 2000. As previously discussed, this data was expanded to 2003 based on 2000-2003 residential and employment growth information. Residential growth for the period 2000-2003 was obtained from building permits as provided by the Springfield Sangamon County Regional Planning Commission (SSCRPC). Employment growth for the period 2000-2003 was obtained from the Springfield & Sangamon County Economic Development Council website as well as interviews with University at Illinois and Lincoln Land Community College staff. The demographic projections for the

<sup>7</sup> Prepared by Springfield Sangamon County Regional Planning Commission, Source: 2000 U.S. Census

<sup>8</sup> Capital Township, Springfield Township and Woodside Township

Springfield/Chatham Planning Area are shown in Table 15. Based on this data, a total growth of 9,470 households and 14,515 employees was projected for the period 2003-2030.

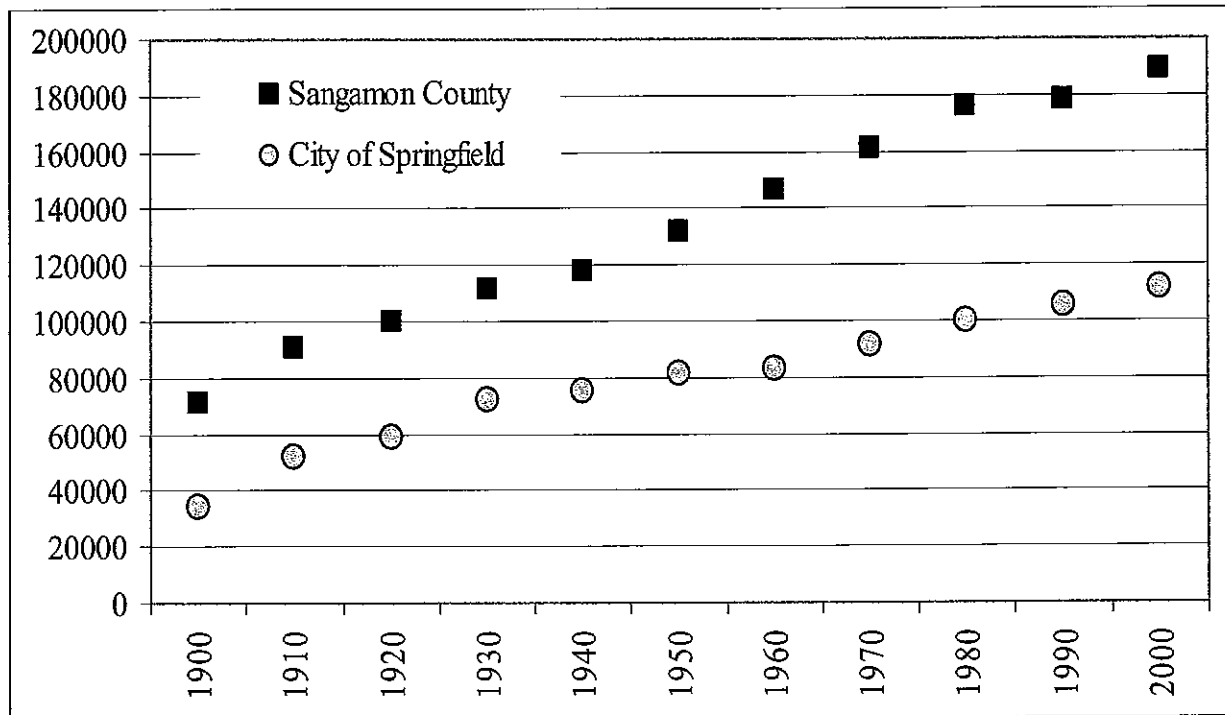


Figure 8: Historical Population for the City of Springfield and Sangamon County

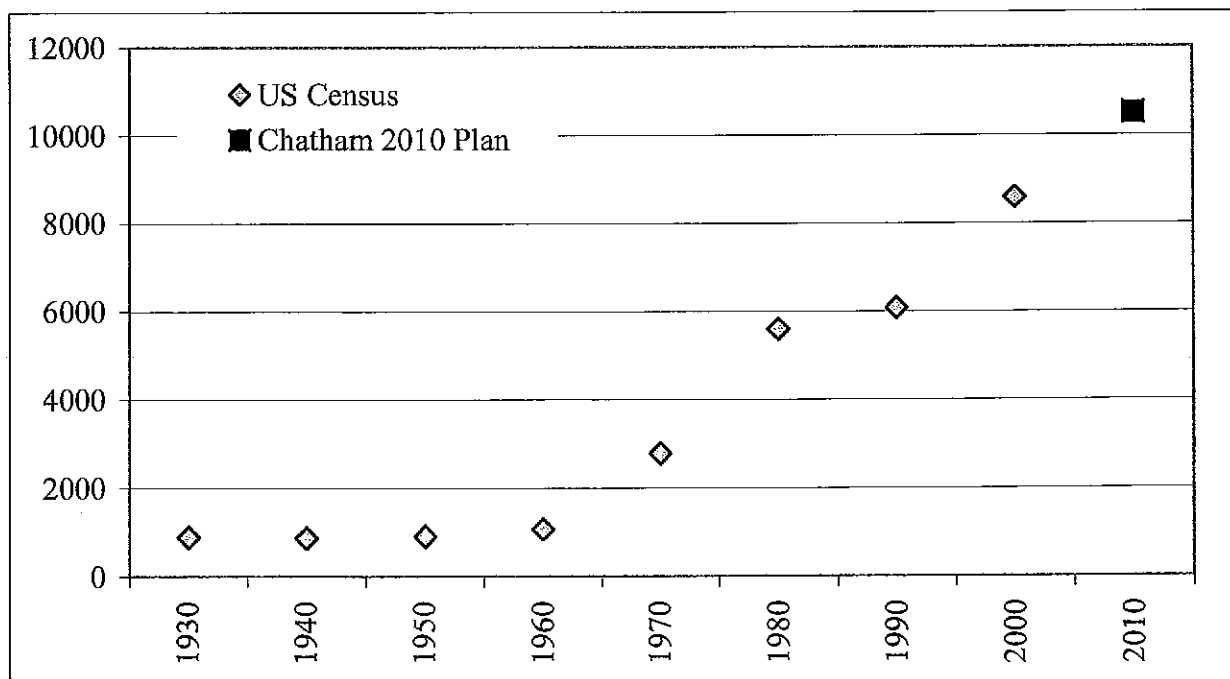


Figure 9: Historical and Forecasted Population of the Village of Chatham



**Table 15: Demographic Characteristics and Projections for the Springfield/Chatham Planning Area**

	<b>Population</b>	<b>Households</b>	<b>Employment</b>
2000	159,800	68,000	106,700
2003	162,740	69,250	109,000
2010	167,790	71,400	112,035
2020	176,180	74,970	117,635
2030	184,990	78,720	123,515
2000-2030 growth	25,190	10,720	16,815
2003-2030 growth	22,255	9,470	14,515

### **Growth Allocation Methodology**

Based on their experience and knowledge of the local area, SSCRPC staff identified residential and commercial areas that are most likely to develop during the period of 2003-2030. Anticipated residential growth areas cover approximately 8180 acres whereas commercial growth areas cover about 2950 acres. Because these areas are greater than what would be expected to develop based on the employment and household forecasts shown in Table 15, partial development of the growth areas was assumed. The allocation of households and employment to these areas is discussed in the following sections.

### **Household Growth Allocation**

Based on discussions with the Village of Chatham officials, Chatham was assumed to experience a population growth of 7,000 (corresponding to a household growth of 3,000) by 2030. The remaining total residential growth was allocated in proportion to the acreage and housing densities of the growth areas identified by SSCRPC and as specified in the Springfield 2020 land use plan map. This resulted in a housing density of 0.75 home/acre for 'low density residential' areas and about 1.5 homes/acres for 'mixed density residential' areas. The Springfield 2020 Comprehensive Plan specifies a density of 3-5 housing units per acre for low density residential areas and 7-8 housing units per acre for mixed density residential areas. The Chatham 2010 Comprehensive Plan specifies a density of 1-5 housing units per acre for low density residential areas and 5-12 housing units per acre for mixed density residential areas. The housing densities resulting from our forecasts assume about a 20% build-out of the areas identified by SSCRPC. The 2003-2030 anticipated residential growth areas are shown in Figure 10.

### **Employment Growth Allocation**

Anticipated employment growth from developments expected to be completed in 2004-2005 were accounted for in addition to the employment growth areas identified by SSCRPC. The data pertaining to these developments was obtained from the Springfield and Sangamon County Economic Development Council website. The employment growths for these developments were estimated using the available square footage data and applying typical employment densities for the appropriate employment types obtained from the ITE Trip Generation Manual (7<sup>th</sup> Edition). The new developments are expected to account for an additional 1,675 employees. The available data along with the employment estimates are summarized in Table 16.

Table 16: Anticipated Development Data and Employment Estimates

Land Use	Size of Development	New Employees
Abraham Lincoln Presidential Library	16,000 sq.ft.	50
Illinois Air National Guard (at Airport)	45,000 sq.ft.	0 <sup>9</sup>
Hilton Garden Inn (Dirksen Parkway)	5,000 sq.ft. meeting space	75
University of Illinois at Springfield	125,175 sq.ft building	200
Illinois Supreme Court Building	43,000 sq.ft.	100
Wells Fargo Home Mortgage	185,000 sq.ft	750
Internal Revenue Service	31,000 sq.ft.	150
CCB Credit Services	50,000 sq.ft	350
<b>Total</b>	<b>-</b>	<b>1,675</b>

The remaining 12,840 employment growth was allocated to the anticipated commercial growth areas in proportion to the commercial development densities specified in the Springfield 2020 land use map. A higher proportion of jobs were allocated to the 'heavy commercial' areas than the 'commercial' areas. The commercial development would represent a 30% build-out of commercial areas. The 2003-2030 employment growth is shown in Figure 11.

#### **Lincoln Land Community College (LLCC) and University of Illinois, Springfield (UIS) Student Growth Allocation**

The prior regional travel demand model did not explicitly account for trips made by college students. In the current (2003) model, these trips are accounted for by introducing the 'Home-Based College' trip purpose. The number of college students by TAZ was obtained from the CTPP 2000. The student population is distributed throughout the Springfield/Chatham Planning Area; about 20% of these students live within a 3 mile radius from college. Current student enrollment data and the anticipated enrollment growth were obtained through interviews with the LLCC and UIS staff.

Lincoln Land Community College currently has 7,000 full-time students; historical annual growth rate in student enrollment has been 3% whereas the target growth rate is 4%<sup>10</sup>. Based on historical data and College growth goals, we project the student enrollment in 2030 to be about 12,670. University of Illinois, Springfield currently has 4,500 students; the historical annual growth rate in student enrollment has been 3%<sup>11</sup>. Again based on historical rates and University growth goals, we project approximately a student enrollment of 8,145 in 2030. Therefore, it is anticipated that there will be an additional 9,315 students in the Springfield area by 2030. These new students were distributed throughout the Springfield/Chatham Planning Area in the same proportion as the existing student population.

<sup>9</sup> Replacement of existing facility

<sup>10</sup> Interview with LLCC staff, May 2004

<sup>11</sup> Interview with UIS staff, May 2004

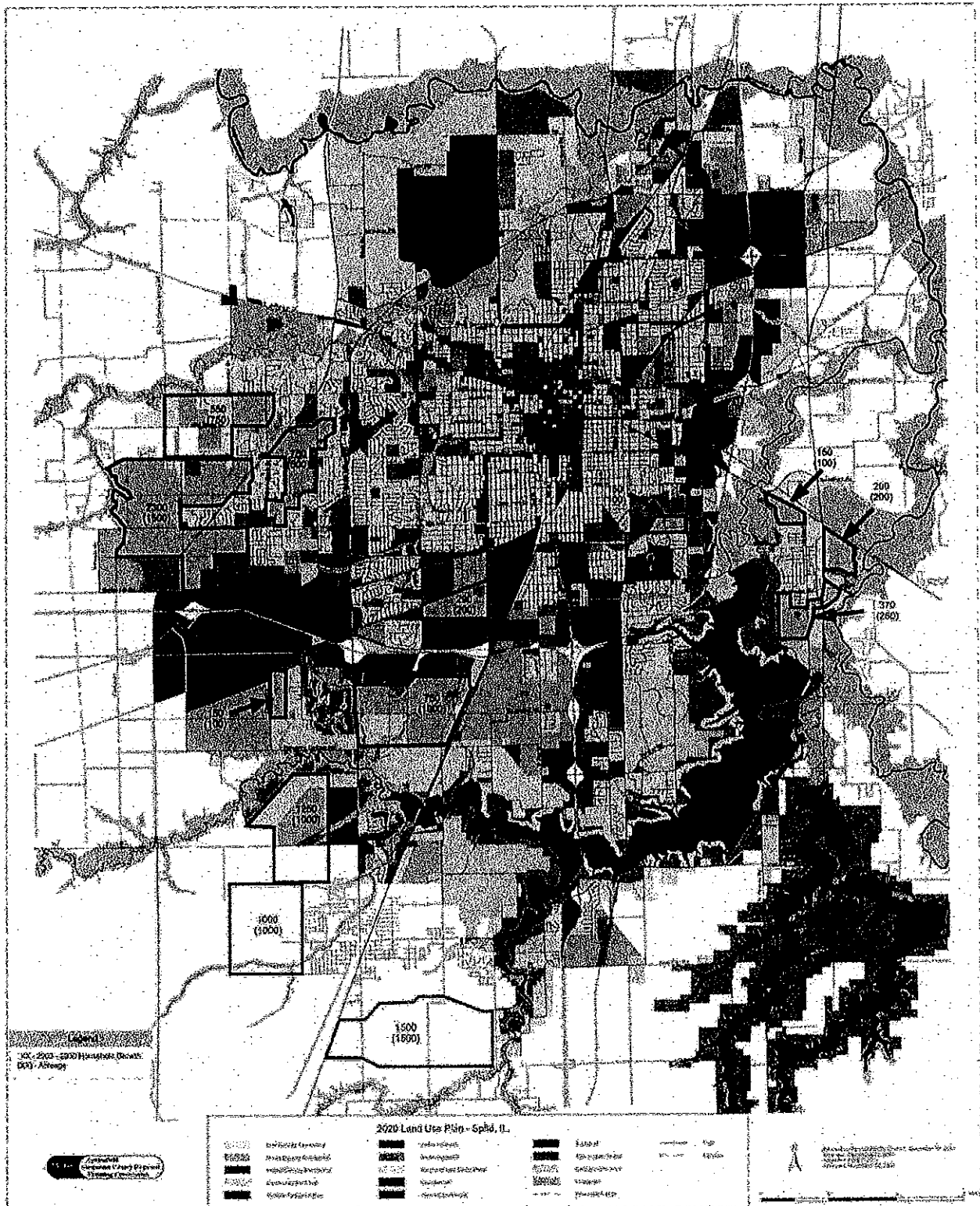
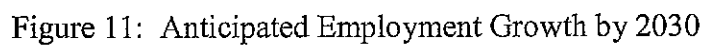


Figure 10: Anticipated Residential Growth by 2030 (Households)



## 5. 2030 NO BUILD TRAFFIC FORECASTS

Future land use projections by TAZ and committed roadway improvement projects were incorporated into the regional travel demand model to develop 2030 No-Build traffic forecasts. Forecasts for external station AADTs were derived using historical growth trends. External-External trips for 2030 were derived from the 2003 base year External-External trip matrix by assuming a 38% growth (derived from the historical growth rate) over the 27 year period.

### Committed Roadways

Committed roadway improvement projects consist of those which have been publicly approved and for which funding sources have been identified. Springfield's committed roadway projects in the South Growth Area are shown in Figure 12 and are discussed in the following:

#### MacArthur Road from Stanford Avenue to I-72

Currently, MacArthur Road terminates at Stanford Ave. Under this improvement, it is to be extended to I-72 (with an interchange with I-72) as a 4-lane major arterial. Recreation Drive is assumed to connect to the extension north of I-72. In the 2030 Existing plus Committed Network (No-Build) scenario, it is anticipated to carry about 18,000 vpd (with a V/C of about 0.55) assuming a 35 mph free flow speed (assumed to function as a minor arterial) and about 25,000 vpd (with a V/C of about 0.75) assuming a free flow speed of 40 mph (assumed to function as a major arterial).

#### Woodside Road/Toronto Road Widening to 4 Lanes

Currently, Woodside and Toronto roads are 2-lane minor arterial roadways. Under this improvement, these are to be widened to 4 lanes. A diagonal connection from Toronto Road to Woodside Road is also committed. In the 2030 No-Build Scenario, this roadway is anticipated to carry about 16,500 vpd with a V/C of about 0.6. Compared to the base year, the V/C ratio remains roughly the same although the volumes increase by about 8,000 vpd.



Figure 12: Committed Roadway Projects

## 2030 No Build Note-Worthy Capacity Deficiencies

The 2030 travel demand model was used to identify roadways that are anticipated to experience capacity deficiencies if no improvements beyond those committed are completed (shown in Figure 13). Identification of these roadways forms the basis for alternatives development and evaluation in order to mitigate these deficiencies. The traffic forecasts and the V/C ratios are discussed below for the roadways that are expected to experience the greatest levels of congestion.

### Route 4

Currently, Route 4 carries about 30,000-35,000 vpd (V/C between 1.0 and 1.2) between Wabash and I-72, 18,000-20,000 vpd (V/C between 0.7-0.8) between I-72 and Mansion Road and 15,000-18,000 vpd (V/C between 0.6-0.8) between Mansion Road and CR 40. Route 4 is expected to carry about 40,000-45,000 vpd between Wabash Ave and I-72, 32,000-40,000 between I-72 and Mansion Road and 20,000-30,000 vpd between Mansion Road and CR 40. It is expected to experience capacity deficiencies with V/C of about 1.0-1.2 South of I-72 and V/C as high as 1.4 north of I-72.



As can be seen in Figures 10 and 11, considerable growth in land use is expected in Chatham and in the South Springfield area. Route 4 connects the heart of Chatham to the commercial destinations along Route 4 in Springfield. Therefore, it serves as a primary route for the Springfield-Chatham traffic. In the absence of any new parallel roadways to serve this traffic, it is anticipated to experience considerable congestion by 2030.

### I-72

Currently I-72 East of I-55 carries about 46,000 vpd with V/C of about 0.8. It is expected to carry about 67,000-69,000 vpd in 2030 and experience capacity deficiencies with V/C of about 1.2. Most of the additional traffic is through traffic along I-55 and I-72, which are assumed to grow by about 38% between 2003 and 2030. I-72 is the only east-west interstate freeway through the middle of Illinois, connecting Champaign and Quincy. The nearest east-west interstate freeways are I-70 (about 60 miles to the south of I-72) and I-80 (about 110 miles to the north of I-72).

### Chatham Road

Currently, Chatham Road north of I-72 carries about 13,000-23,000 vpd with V/C between 1.0-1.2. It is expected to carry about 17,000-27,000 vpd and experience high V/C of about 1.2-1.4. As shown in Figures 10 and 11, some residential and commercial employment growth is expected to occur in the vicinity of Chatham Road, which will therefore experience an increase in traffic volumes.

### Wabash Road

Currently, Wabash Road carries 10,000-24,000 vpd West of Route 4 (V/C between 0.8-1.1) and 25,000-28,000 vpd (V/C between 0.9-1.0) East of Route 4. It is expected to carry about 15,000-28,000 West of Route 4 and 30,000-40,000 East of Route 4 and experience capacity deficiencies with V/C of about 1.1-1.3. The traffic volume increase can be attributed to the residential and employment growth that is expected to occur in the vicinity of these segments of Wabash road.

### Business 55

Currently, Business 55 north of I-72 carries 27,000-32,000 vpd (with V/C between 0.8-1.4). Business 55 north of I-72 is anticipated to carry about 35,000-40,000 vpd and experience capacity deficiencies with V/C as high as 1.8. Business 55 serves as a major gateway into downtown Springfield and is also one of the major crossings of I-72. An increase in external-internal trips along with some commercial growth along the Business 55 corridor will result in an increase in volumes for this roadway.

### **No Build Model Validation**

2030 No Build Model Volumes were compared with historical trends in traffic volumes along with forecasts from other previous studies. The locations where this validation was performed are shown in Figure 14. It can be seen that the forecasts are reasonable compared to the historical

trends and the other forecasts. These comparisons are shown in the graphs at the end of this document.

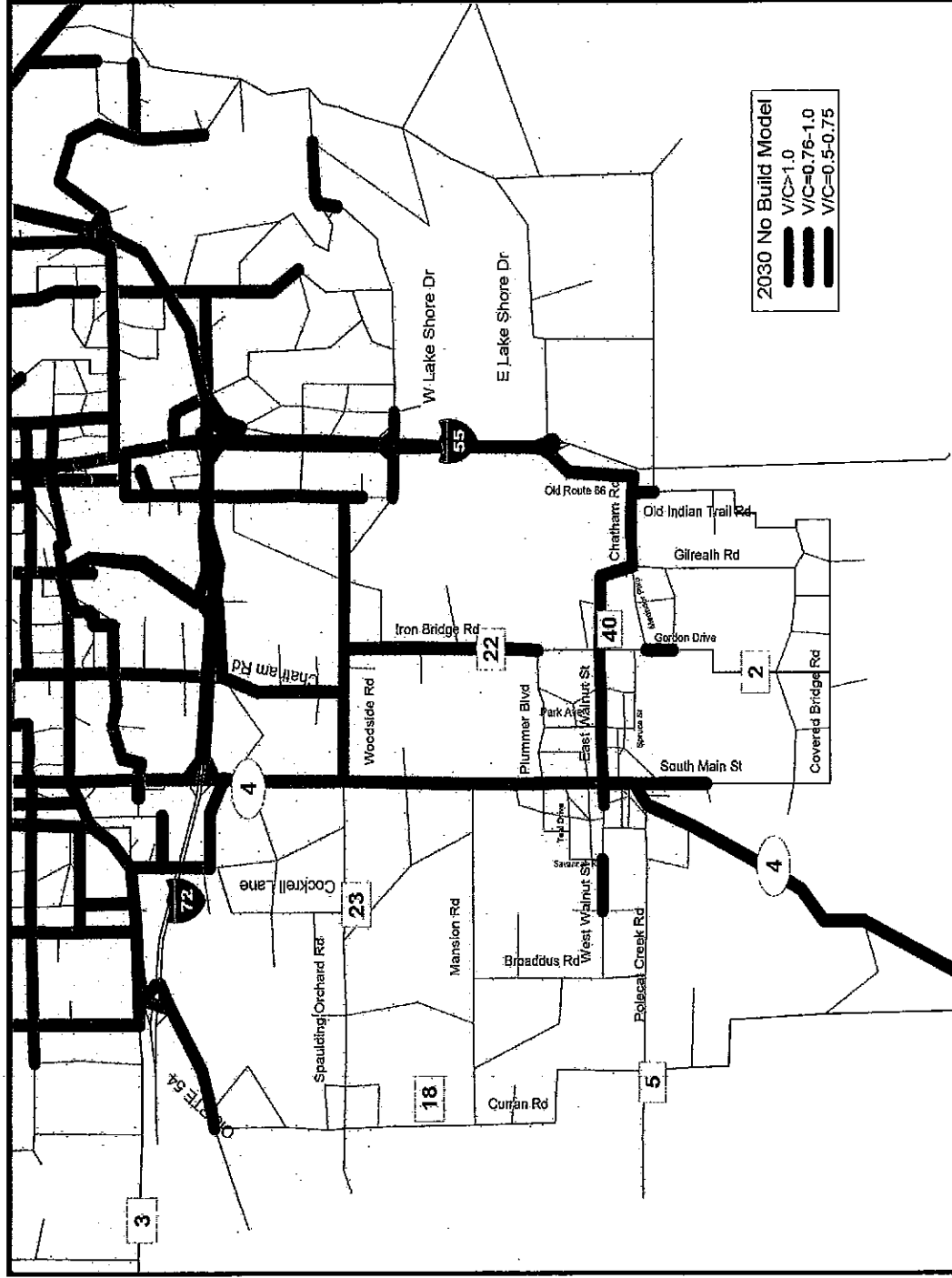


Figure 13: 2030 Model Capacity Deficient Roadways

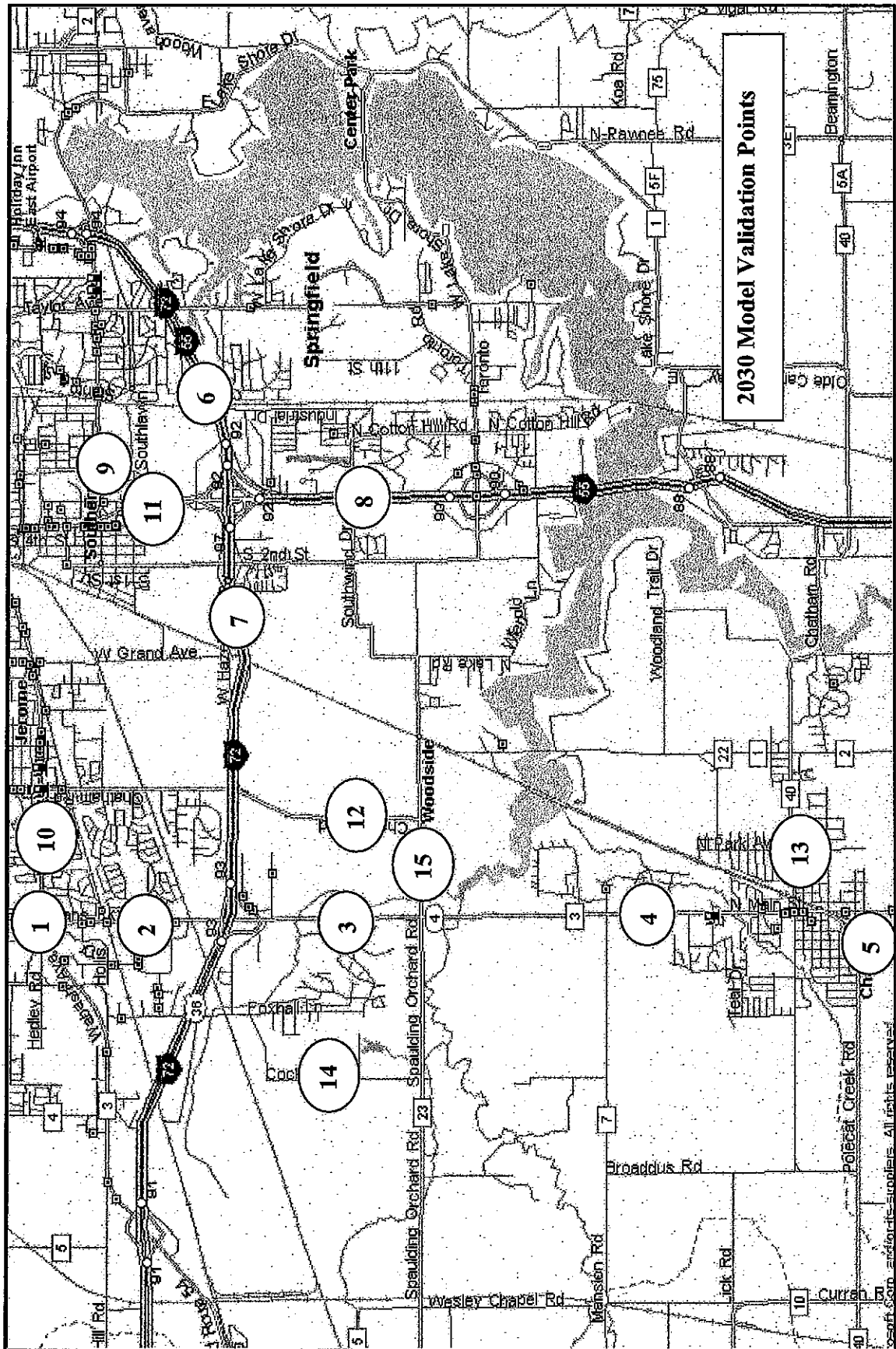


Figure 14: 2030 No Build Model Validation Points

## 6. ALTERNATIVES DEVELOPMENT AND ANALYSIS

Based on discussions with the Technical Advisory Committee, several roadway improvement projects were identified that could potentially alleviate the deficiencies in the transportation system in the South Springfield Growth Area. Effects of each of these improvements were evaluated using the 2030 Springfield travel demand model. To reduce the number of combinations of these alternatives, these were grouped into five 'scenarios' by ensuring that the improvements in each scenario have effects that are independent of each other. Table 17 lists the scenarios that were developed initially for analysis. These are also shown in Figure 15.

Table 17: Initial Transportation Improvement Alternatives

Alternative	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E (all)
North MacArthur					
Toronto Rd/Woodside Widening (to IL 4)					
IL 4 widen 6 lanes (Woodside/Monroe)					
Wabash widen 5 lanes (Veterans/I-72)				△ △ △	
South MacArthur to Woodside Road					
Iron Bridge widening (Woodside/Walnut)					
6 <sup>th</sup> Street widen 6 lanes (Stevenson/I-72)					
Panther Creek/Southwind Connection			△ △ △		
North Lake / Concetta Connection			○ ○ ○		
Prairie Crossing to MacArthur		△ △ △			
11 <sup>th</sup> Street Extensions					
University Extension					
Lincolnshire/Hazel Dell Connection	△ △ △				
Stanford Extension					
Bradforton/Broadus Connection					
Mathers Road Extension		△ △ △			
Hollis Extension			○ ○ ○		
Mercantile Extension			○ ○ ○		
Mt. Zion School Road Extension			△ △ △		
Plummer Extension					
Pullium Extension					
I-55 widen to 6-lanes (6 <sup>th</sup> St./Clear Lake)					



△ △ △ east/west routes in north study area

north/south (arterial) versus east/west (I-55) routes between Chatham and Springfield

with and without University, Stanford, and 11<sup>th</sup> Street extensions

with and without North Lake/Concetta connection and Hollis and Mercantile extensions

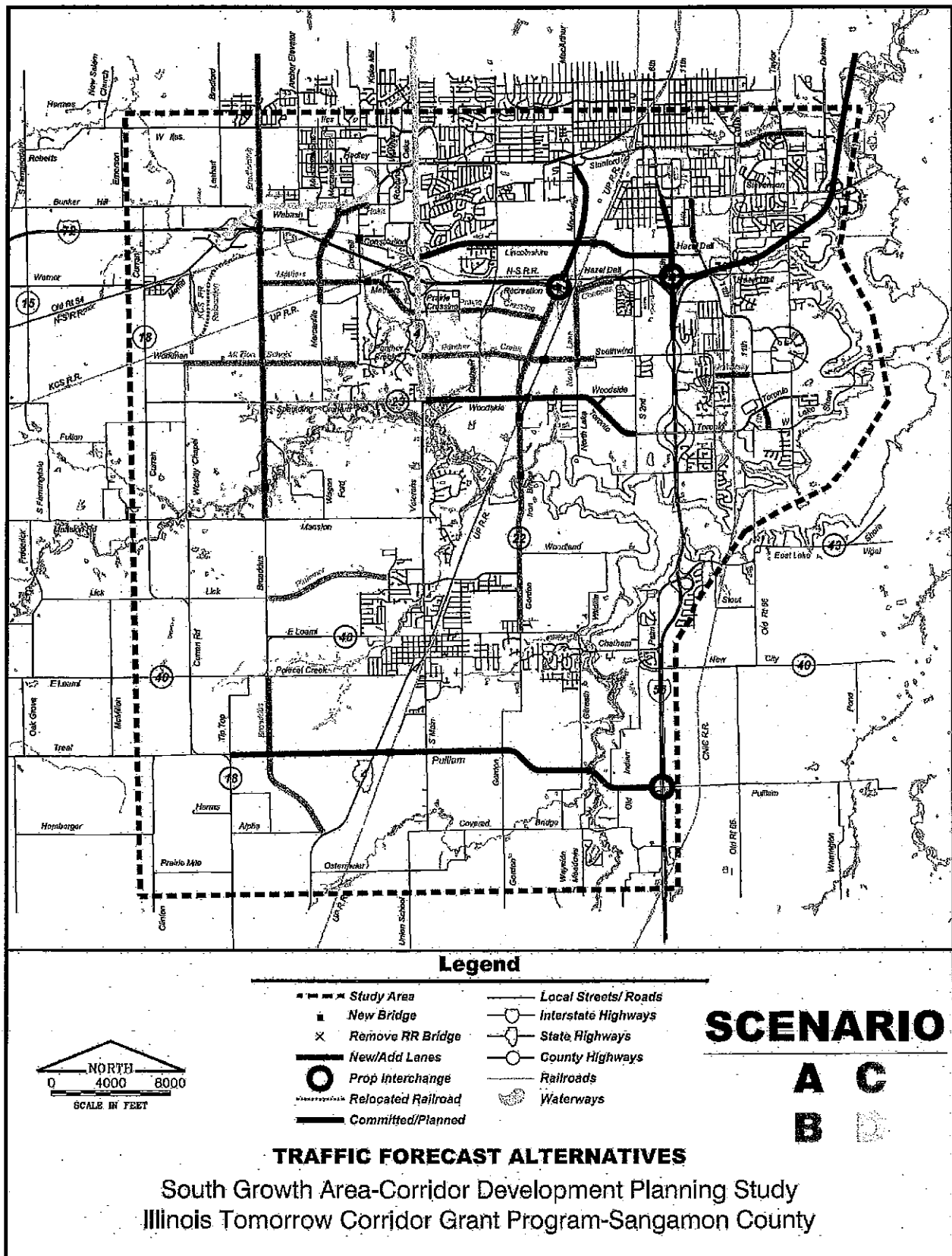


Figure 15: Initial Transportation Improvement Scenarios (Source: CMT)



Alternatives analysis using the 2030 Travel Demand Model for the several scenarios developed is discussed below.

### *Scenario A*

Widening of I-55 to 6 lanes draws an additional 5,000 vpd to I-55 South of I-72 whereas 6th St picks up an additional 6,000 vpd. Even though 6th St is widened to 6 lanes, it draws additional traffic and continues to experience capacity problems. It provides virtually no relief to Route 4 since the latter continues to serve as the primary route for the Springfield-Chatham traffic. Pulliam extension carries 1,500 – 7,000 vpd East of Route 4 and negligible traffic West of Route 4. It provides some relief to East Walnut St/Chatham Rd, from which it diverts traffic. Lincolnshire/Hazel Dell Connection (assumed 2 lanes with a free flow speed of 30 mph) carries about 7,000 – 10,000 East of McArthur Extension, about 5,000 – 10,000 vpd between Chatham Road and Mac Arthur Extension and about 2,000 – 5,000 West of Chatham Road. It diverts about 40-50% of the traffic off 6<sup>th</sup> St Frontage Road/Recreational Drive. The connection is expected to carry 2,000-4,000 more if 35 mph (vs 30 mph) free flow speed is assumed for the roadway and about 10% more traffic under a 4-lane scenario.

### *Scenario B*

Bradfordton Extension (assuming a free flow speed of 30 mph) carries 2,500 – 4,000 vpd South of I-72 and 7,000-10,000 vpd between Wabash and Iles. It diverts traffic mainly from Route 4, which will experience a decrease in traffic volumes by about 5%. It carries 30% more traffic if 35 mph (vs 30 mph) is assumed as the free flow speed for the roadway. Broaddus connection carries negligible traffic since there is no significant land use in its vicinity. Plummer extension carries 1,000 – 4,500 vpd and provides relief to CH 40 and Mansion Road. Mathers Road Extension carries about 5,500 vpd East of Cockrell Lane and about 1,500 vpd West of Cockrell Lane. It provides some relief to Cockrell Lane and North McArthur Extension. 11th St Extension between Stevenson and Hazel Dell carries about 17,000 - 20,000 vpd (4 lane assumption). It provides some relief to 6th St North of I-72, North McArthur Extension and S 2nd St (10-15% from each). Because of diversion from these roadways, it creates capacity issues on 11th St between I-72 and Hazel Dell (70% increase in traffic volumes) if that segment is not widened to 4 lanes. Under a 2 lane assumption, the extension carries about 2,000-4,000 vpd less traffic. 11th St Extension South of Toronto Rd carries about 2,500 vpd, which is mainly traffic that would otherwise have used West Lake Shore Drive between Toronto Road and Shepherd Road (this segment was assumed to be closed in this scenario). University Extension carries about 3,500 vpd. It diverts University trips coming from Toronto Road off 11th Street. Stanford Extension carries about 6,000-8,000 vpd and diverts traffic from Dirksen Pkwy and Ash St (about 30 %).

### *Scenario C*

North McArthur Blvd carries 20,000-30,000 vpd (depending on whether a free flow speed of 35 or 40 mph is assumed). South McArthur (under a 4 lane assumption) carries 14,500-20,000 vpd (depending on whether a free flow speed of 30 or 35 mph is assumed). South McArthur (under a 2 lane assumption) carries 11,000-13,000 vpd (depending on whether a free flow speed of 30 or 35 mph is assumed). It diverts about 10% from Route 4 and about 25% from South 2<sup>nd</sup> St. Traffic forecasts on McArthur are comparable to those from past studies. If Iron Bridge is widened to 4

lanes, it is expected to carry an additional 3,000-4,500 vpd (total 14,000-15,000 vpd); therefore 4 lanes are justified for Iron Bridge Road. Widening of Iron Bridge has negligible impact on Route 4. The South McArthur Extension along with widening of Iron Bridge Road causes a reduction in volumes on I-55 by about 10% South of I-72 and a reduction in volumes on 2nd St by about 12%. Panther Creek/Southwind Connection is expected to carry about 4,000 vpd west of South MacArthur extension (this can be attributed to the residential growth expected to occur there) and only about 1,000 vpd east of the extension. Mt. Zion School Rd Extension carries about 4,000-5,000 East of Route 4 and negligible traffic West of Route 4 since there is minimal land use in its vicinity West of Route 4. Both Panther Creek/ Southwind Connection and Mt. Zion School Rd extensions do not provide significant relief to any facility. North Lake/Concetta Connection carries about 500-1,000 vpd and does not provide significant relief to any facility. Hollis Extension carries about 6,000 vpd and provides some relief to Wabash Ave. Mercantile Extension is expected to carry about 1,500-2,000 vpd. It draws about 25% of the traffic from Cockrell Lane.

#### *Scenario D*

If Route 4 is widened from 4 to 6 lanes, it carries an additional 3,000-5,000 vpd South of I-72 and 8,000-12,000 vpd North of I-72, exacerbating capacity problems south of the project. It draws traffic from McArthur Blvd North of I-72, I-55 South of I-72 and Cockrell Lane. Even though Route 4 is widened, the additional traffic it draws causes it to continue experiencing capacity deficiencies with V/C between 0.7 and 1.0. Wabash Ave carries an additional 5,000-6,000 vpd West of Route 4 (18,000-22,000 vpd total) and does not provide relief to any other facility.

#### *Summary of Alternatives Analysis*

Evaluation of the transportation alternative scenarios revealed those improvements that would have major, significant, minor and negligible impacts to the existing transportation system. These projects are listed below.

#### Improvements with Major Impacts

- 11th St extension
- Stanford extension
- South McArthur extension
- Iron Bridge widening
- 6th St widening
- I-72 widening
- Wabash widening
- Route 4 widening

#### Improvements with Significant Impacts

- Bradforton extension
- Lincolnshire/Hazel Dell Connection
- Hollis extension

- Mathers Road Extension
- Mercantile extension
- Panther Creek/Southwind Connection
- Pulliam extension

#### Improvements with Minor Impacts

- Plummer extension
- University extension
- Broadus connection

#### Improvements with Negligible Impacts

- North Lake/Concetta connection
- Mt Zion School Road extension
- 11<sup>th</sup> St South of Toronto Rd

#### *2030 Recommended Network*

The projects that were identified to have negligible impact on the existing roadway network were eliminated from further consideration; the rest of the improvements were included in the recommended network. The final roadway improvement plan is shown in Figure 16. The volumes and V/C under this scenario for some major roadways are discussed below.

- MacArthur extension North of I-72 carries about 18,000 vpd with V/C of about 0.6.
- MacArthur extension South of I-72 carries about 14,500 vpd with V/C of about 0.6.
- 11<sup>th</sup> Street extension between Hazel Dell and Stevenson Drive carries about 13,000 with a V/C of about 0.55.
- Iron Bridge Road south of Woodside Road carries about 12,000 vpd and has a V/C of about 0.5.
- IL 4 carries about 45,000 vpd North of I-72 and about 33,000 vpd South of I-72. Under this scenario, IL 4 continues to experience capacity deficiencies with V/C of about 0.7-1.0.
- I-55/I-72 East of I-55 carries about 72,900 vpd and experiences a reduction in V/C ratio compared to the No Build scenario from 1.0 to 0.8.
- Stevenson Drive East of 6<sup>th</sup> St carries about 30,000 vpd with V/C of about 0.8.
- Wabash Ave East of IL 4 carries about 30,500 vpd with V/C of about 1.0.
- 6<sup>th</sup> Street North of I-72 carries about 30,500 vpd with V/C of about 1.0.

It can be seen that capacity deficiencies still prevail under the recommended network plan scenario especially on IL 4 through Chatham and north of Chatham. The V/C ratios for the recommended network are shown in Figure 17.

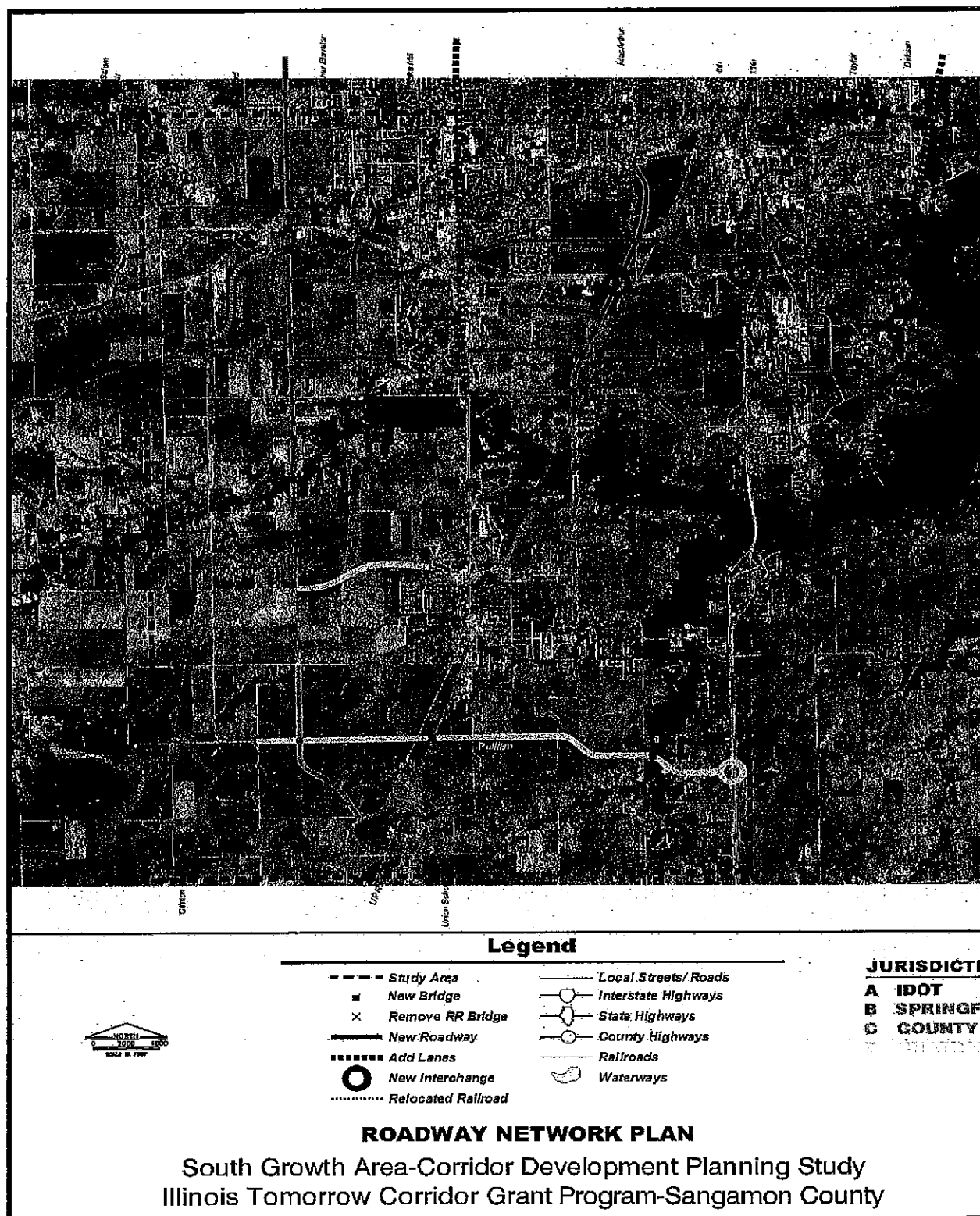


Figure 16: Final roadway improvement plan (Source: CMT)

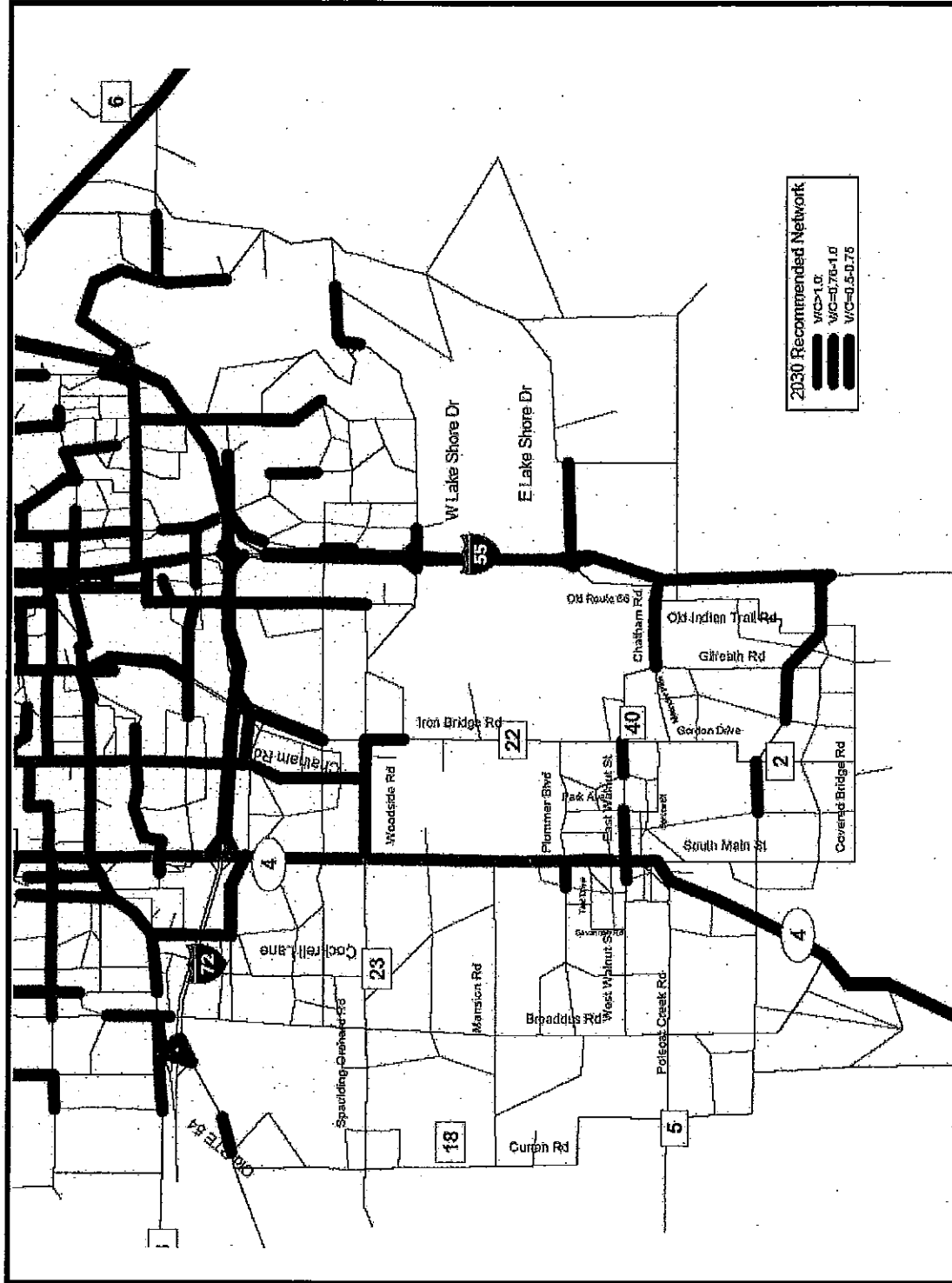


Figure 17: V/C ratios for 2030 Recommended Network

## 7. SUMMARY

A comparison of the traffic volumes for the major roadway segments for the various scenarios are discussed below and are also shown in Table 18. In general, the forecasts are reasonable compared to those in previous studies. The comparisons are also shown in the graphs at the end of this document.

### *IL 4*

IL 4 carries the highest traffic volumes in Scenarios D and E compared to No Build and other scenarios since it is assumed widened from 4 to 6 lanes in these scenarios. The Volumes on IL 4 South of I-72 in Scenarios B and C are lower compared to No Build and other scenarios due to the effects of Bradfordton and South MacArthur Extensions and the Iron Bridge widening. IL 4 is expected to continue to experience capacity deficiencies in spite of all the roadway improvements. This is because widening to 6 lanes draws additional traffic to IL 4 whereas improvements to parallel roadways do not draw sufficient traffic away from it.

### *I-55/I-72 East of I-55*

I-55/I-72 East of I-55 carries highest traffic volumes in Scenarios A and E compared to No Build and other scenarios since it is assumed widened from 4 to 6 lanes in these scenarios. The widening provides some relief to the facility, with V/C reducing from about 1.0 to about 0.75. The volumes on this segment are lower in Scenario B due to the effect of the Stanford Extension. The volumes on I-55/I-72 East of I-55 are reasonable compared to those in the MacArthur Blvd Study<sup>12</sup> and the 6<sup>th</sup> Street Study<sup>13</sup>.

### *Stevenson Drive East of 6<sup>th</sup> St*

Stevenson Drive East of 6<sup>th</sup> St carries highest traffic volumes in the No Build scenario since the improvements in all the other scenarios draw traffic away from this facility. The volumes in scenario E are the lowest due to the cumulative effect of all the roadway improvements.

### *Wabash Ave East of IL 4*

Wabash Ave East of IL 4 carries highest traffic volumes in Scenario D since Wabash is assumed widened to 5 lanes in that scenario. The volumes on this segment are lowest in Scenario A due to the effects of Lincolnshire/Hazel Dell extension, which runs parallel to it. The volumes in scenario E are the lowest due to the cumulative effect of all the roadway improvements. The volumes on Wabash Ave East of IL 4 are reasonable compared to those in the MacArthur Blvd Study.

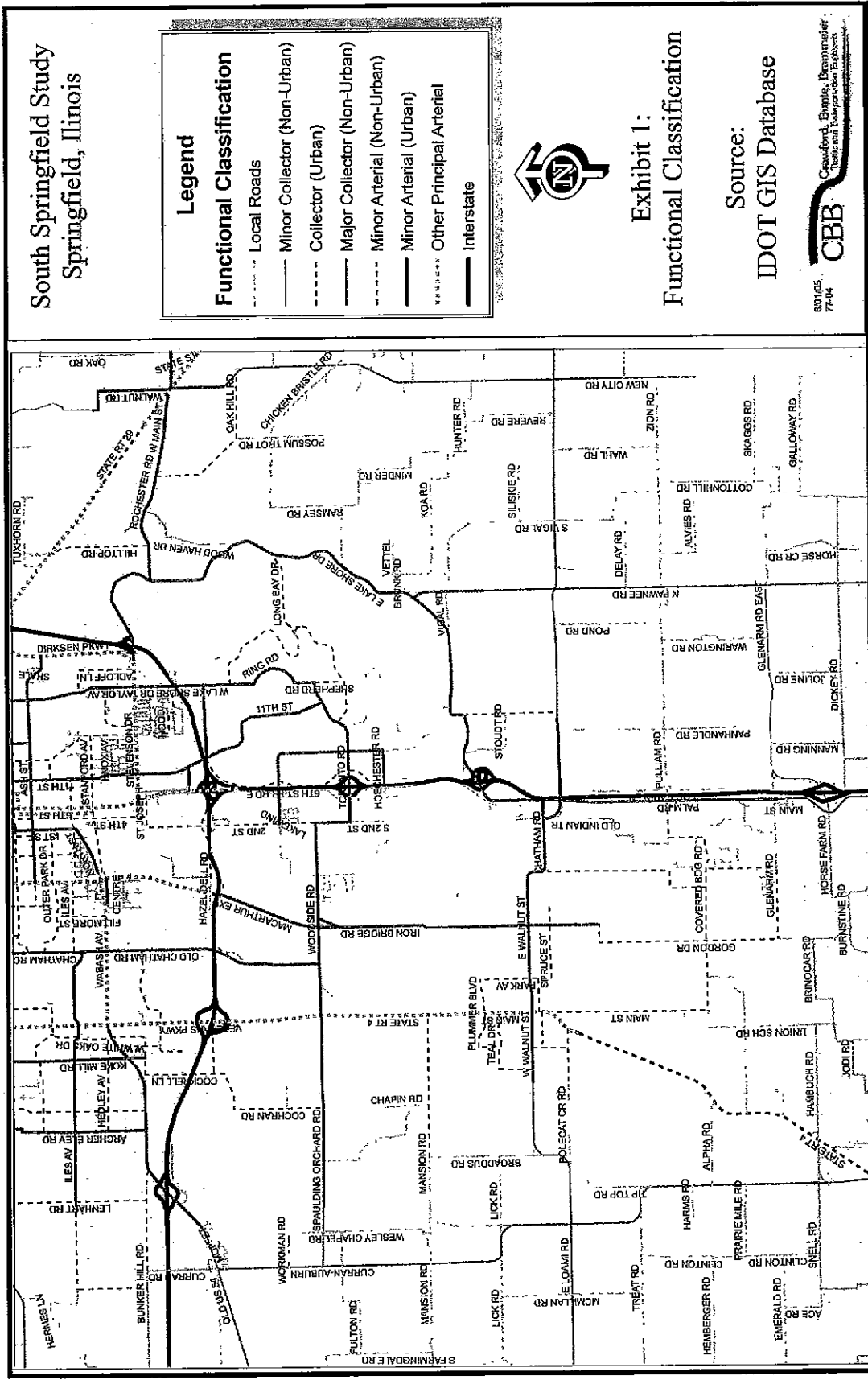
<sup>12</sup> "MacArthur Boulevard Extension" completed by CBB in March 2002.

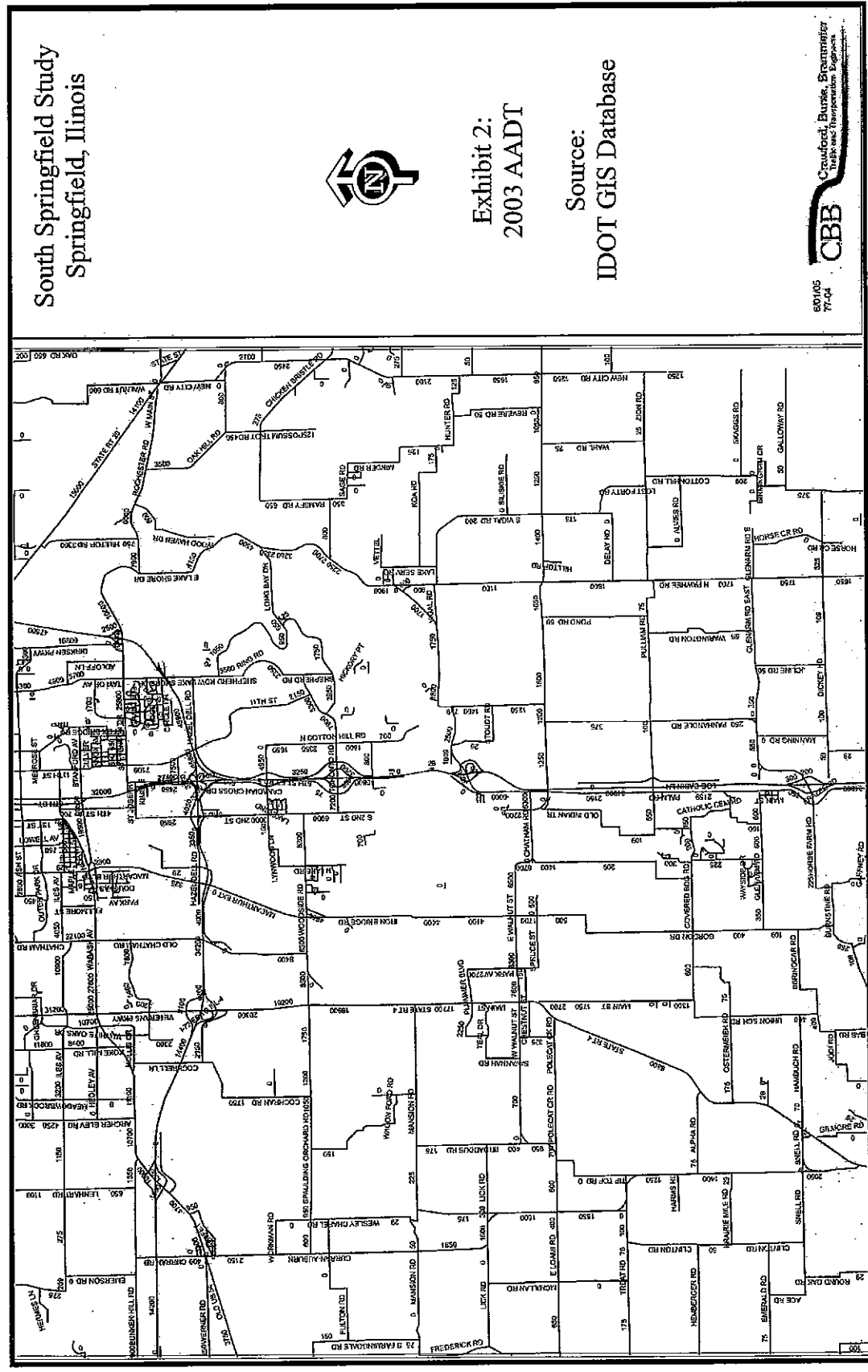
<sup>13</sup> "Springfield 6<sup>th</sup> Street Interchange" completed by CBB in March 2002.

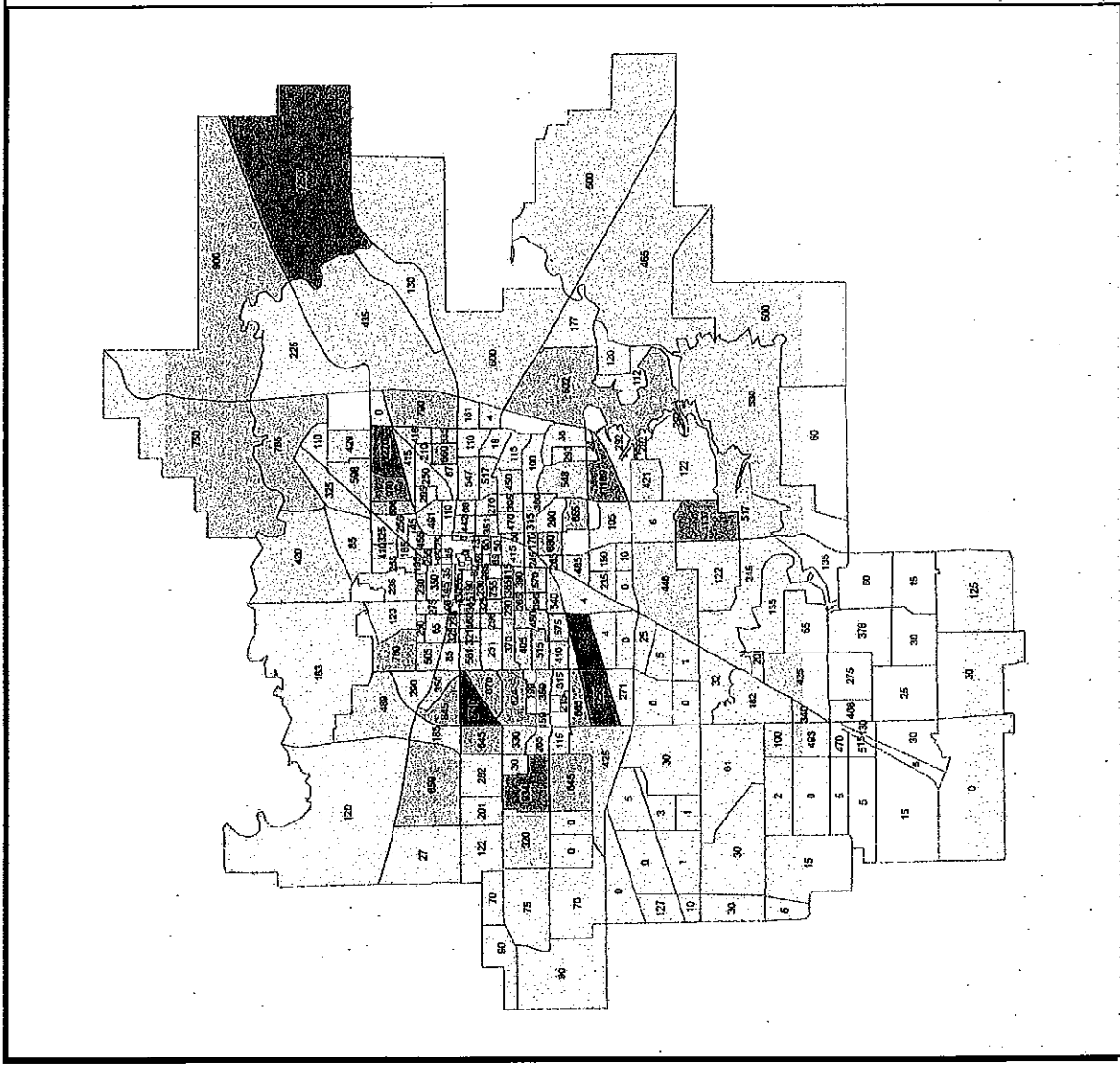


Two Way Average Daily Traffic Volumes								
	Total Lanes	2003	2030 (No Build)	2030 Scenario A	2030 Scenario B	2030 Scenario C	2030 Scenario D	2030 Recommended
<b>Scenario A:</b>								
I-55/72 E of I-55	6	45,900	67,000	71,500	n/a	n/a	n/a	72,900
Bus 55 N of I-72	6	27,400	34,700	40,900	n/a	n/a	n/a	29,800
Lincolnshire (Freedom Dr. to South 6th)	2	n/a	n/a	10,000	n/a	n/a	n/a	9,000
Pulliam (IL 4 to I-55)	2	n/a	n/a	4,500	n/a	n/a	n/a	6,000
<b>Scenario B:</b>								
11th Street (Hazel Dell to Stevenson Dr.)	4/5	n/a	n/a	n/a	17,000	n/a	n/a	13,000
Stanford Ave east extension	2	n/a	n/a	n/a	8,000	n/a	n/a	6,000
Prairie Crossing extension	4	n/a	n/a	n/a	4,500	n/a	n/a	500
Mathers extension	2	n/a	n/a	n/a	1,500	n/a	n/a	500
Bradforton (north of Wabash)	2/3	n/a	n/a	n/a	8,000	n/a	n/a	7,500
Bradforton (south of Wabash)	2/3	n/a	n/a	n/a	4,000	n/a	n/a	2,500
<b>Scenario C:</b>								
MacArthur Ext. (south of I-72 to Woodside)	4	n/a	n/a	n/a	n/a	17,000	n/a	14,500
Iron Bridge south of Woodside	4	4,650	10,000	n/a	n/a	14,000	n/a	12,000
Panther Creek Drive extension	2	n/a	n/a	n/a	n/a	4,000	n/a	3,000
Mercantile Dr. extension south of Wabash	2	n/a	n/a	n/a	n/a	1,500	n/a	600
<b>Scenario D:</b>								
Wabash west of Koke Mill to I-72	4/5	11,000	17,000	n/a	n/a	n/a	21,000	21,000
IL 4 (north of Wabash)	6	28,500	31,500	n/a	n/a	n/a	41,250	41,000
IL 4 (I-72 to Wabash)	6	34,000	44,000	n/a	n/a	n/a	52,000	45,000
IL 4 (Woodside to I-72)	6	19,200	33,000	n/a	n/a	n/a	38,250	33,000
<b>Other existing connections:</b>								
Cockrell Lane (north of Mathers Road)	2	3,750	9,000	8,650	8,500	8,100	7,500	6,200
Woodside Road (East of IL 4)	2	8,500	16,500	15,000	14,250	18,000	16,500	15,000
Spaulding Orchard (CH 23) west of IL 4	2	1,200	2,000	2,000	2,100	2,100	2,000	1,500
MacArthur Ext (north of I-72)	4/5	n/a	18,000	18,500	15,000	21,000	16,000	18,000
Stevenson Dr E of Bus 55	4	27,900	38,500	37,800	33,000	37,900	37,300	30,000
Bus 55 N of I-72	4	27,400	34,700	n/a	29,000	34,000	33,300	n/a
I-72 W of I-55	4	34,200	50,300	51,400	49,600	57,800	51,500	59,000
I-55 S of I-72	6	45,800	66,000	71,200	68,200	60,500	64,000	62,000
Wabash E of IL 4	4	25,000	33,000	31,200	31,100	32,300	33,700	29,900
Wabash west of Koke Mill to I-72	2/3	11,000	17,000	16,500	12,000	15,500	n/a	n/a
Iron Bridge Road south of Woodside Rd.	2	4,650	10,000	8,500	9,000	n/a	9,500	n/a
Chatham Road N of CH 23	2	8,400	12,600	12,000	11,600	12,700	12,000	11,000
IL 4 (north of Wabash)	4	28,500	31,500	31,000	31,000	32,500	n/a	n/a
IL 4 (I-72 to Wabash)	4	34,000	44,000	41,000	40,000	43,000	n/a	n/a
IL 4 (Woodside to I-72)	4	19,200	33,000	32,750	31,400	31,000	n/a	n/a
IL 4 (Chatham to Woodside Rd.)	4	17,700	29,000	28,600	29,400	29,000	30,500	30,000
CH 40 east of IL 4	2	7,900	13,800	12,400	13,200	12,800	12,700	9,800

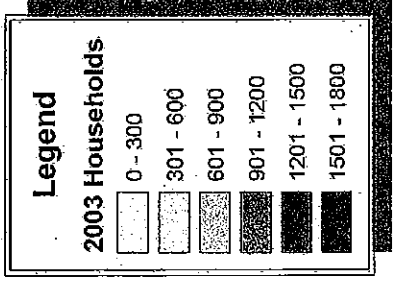
Table 18: Comparison of Daily Volumes for the Alternative Scenario







**South Springfield Study**  
**Springfield, Illinois**



**Exhibit 3:**  
**2003 Households By TAZ**

**Source:**  
**2003 Springfield Travel**  
**Demand Model**

# South Springfield Study Springfield, Illinois

## Legend

### 2003 Total Employment

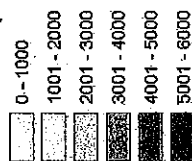
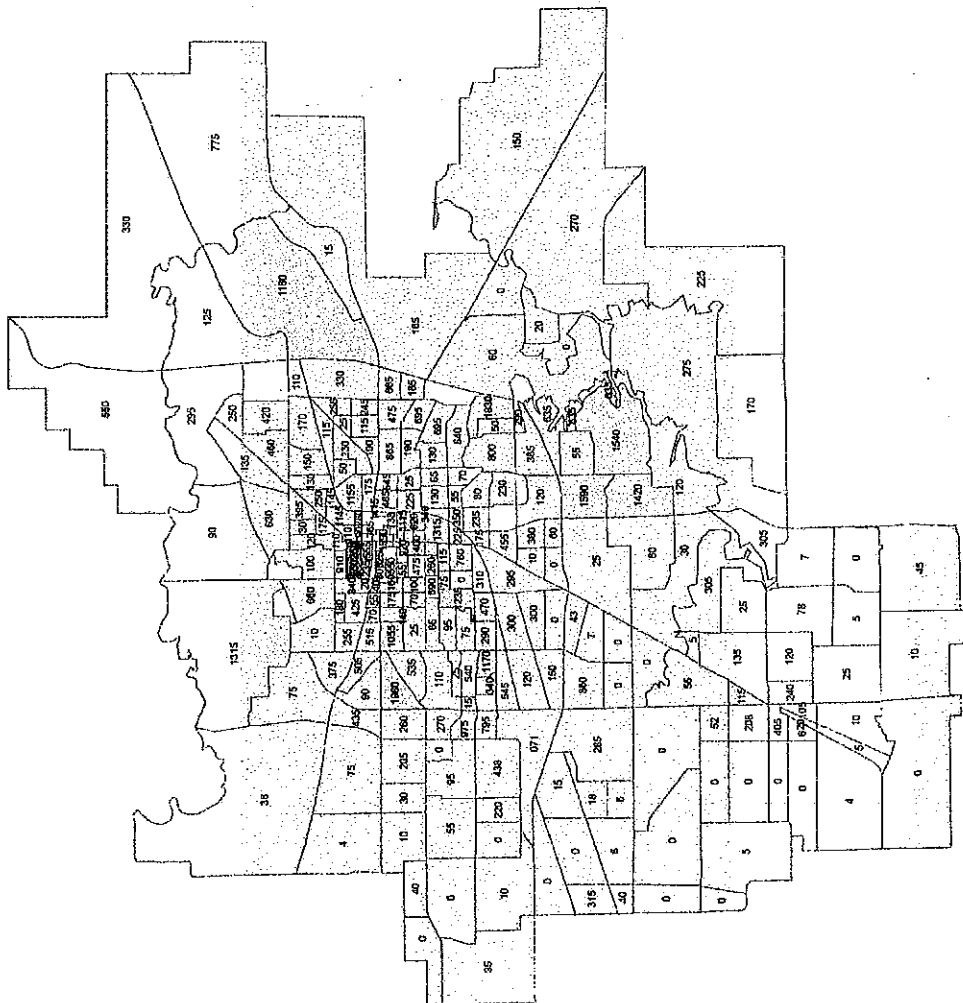


Exhibit 4:  
2003 Total Employment  
By TAZ

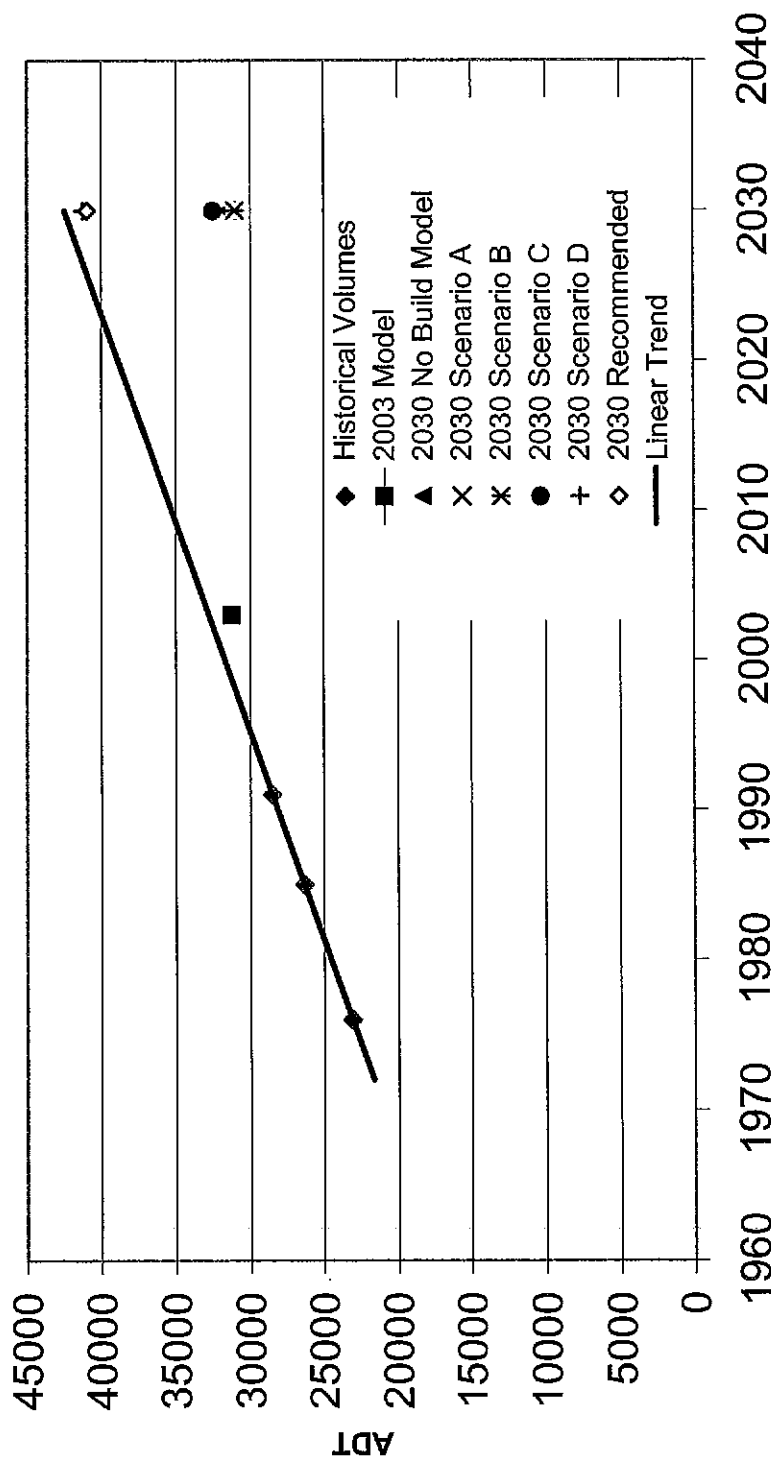
Source:  
2003 Springfield Travel  
Demand Model



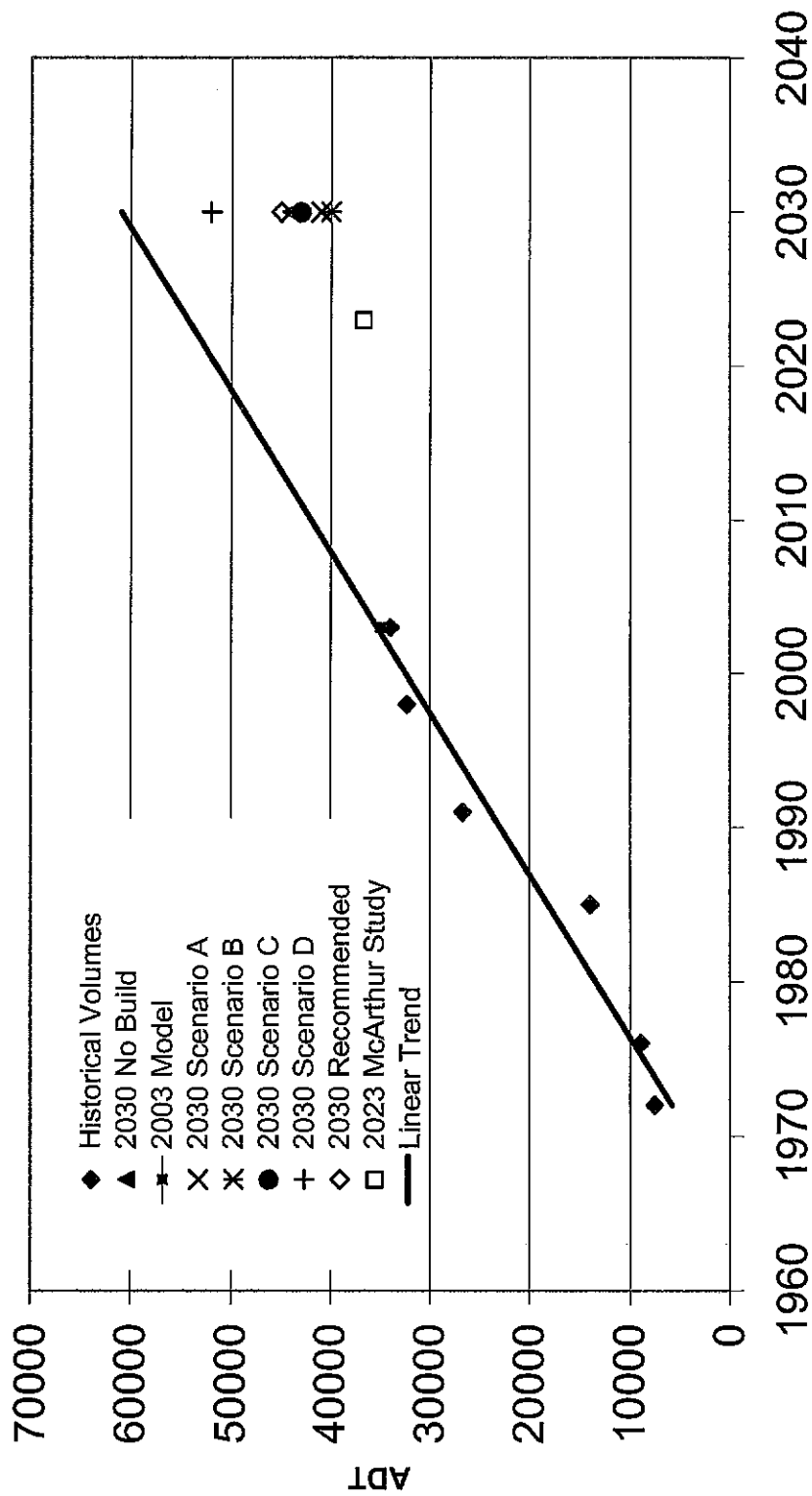
## **2030 Model Validation Graphs**



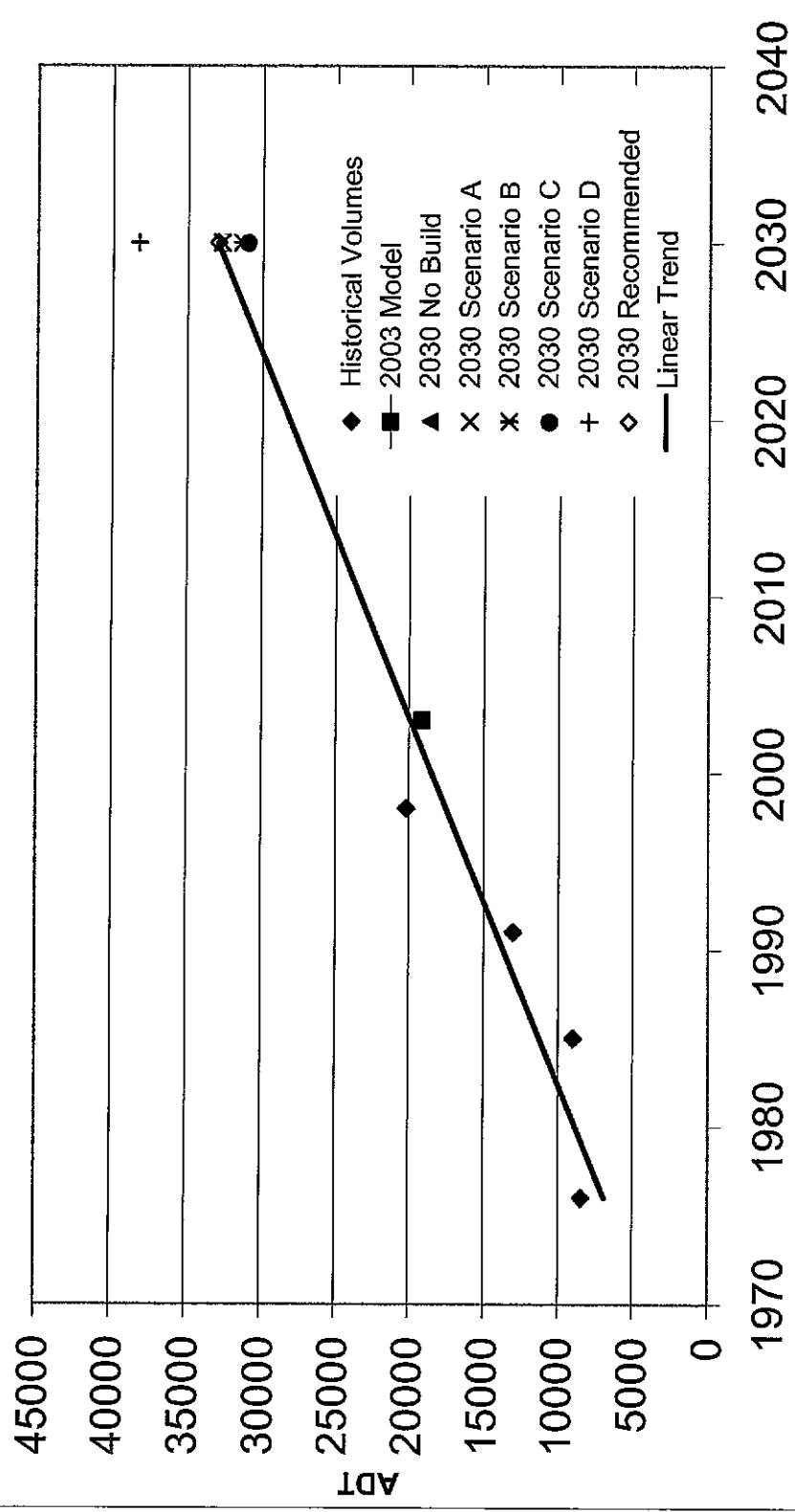
## Location 1: IL 4 N of Wabash



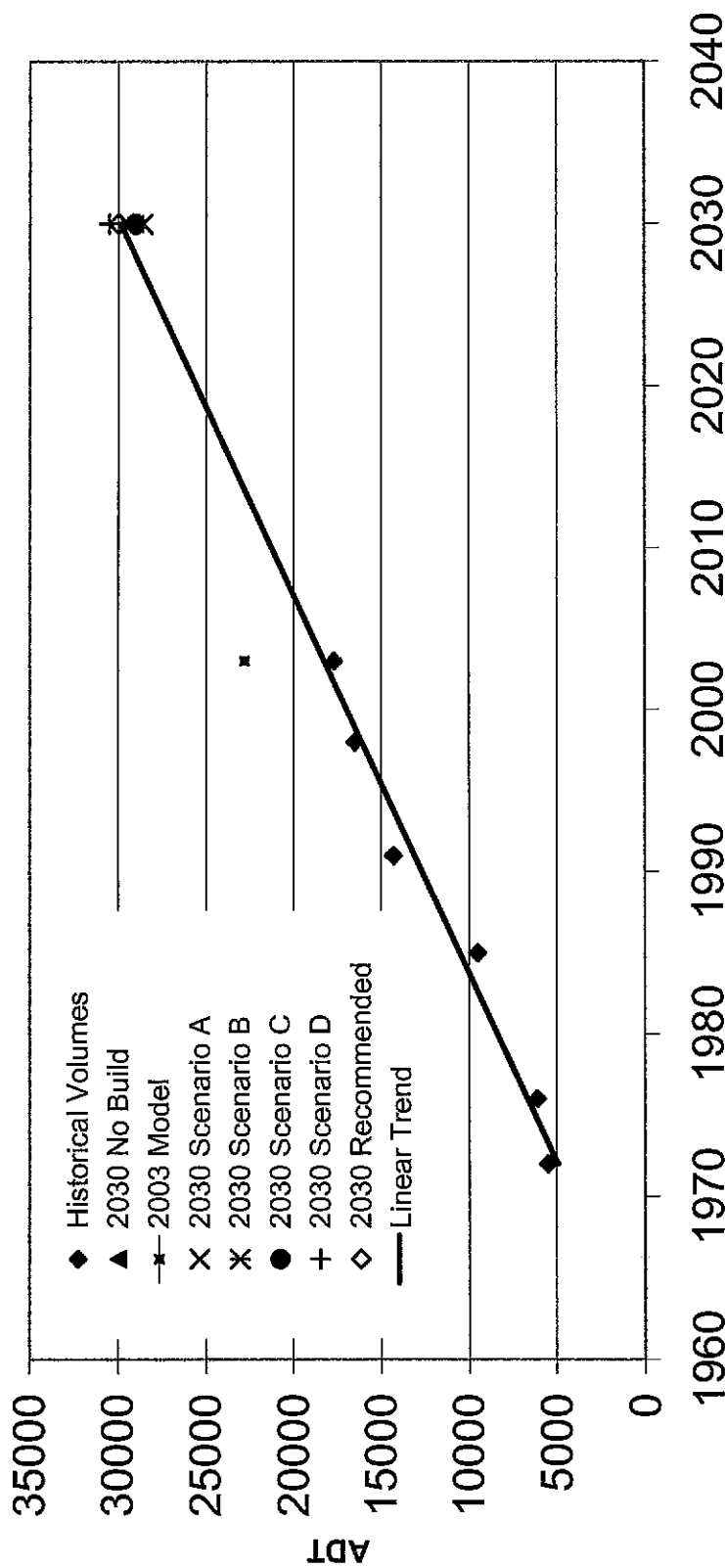
## Location 2: IL 4 N of I-72



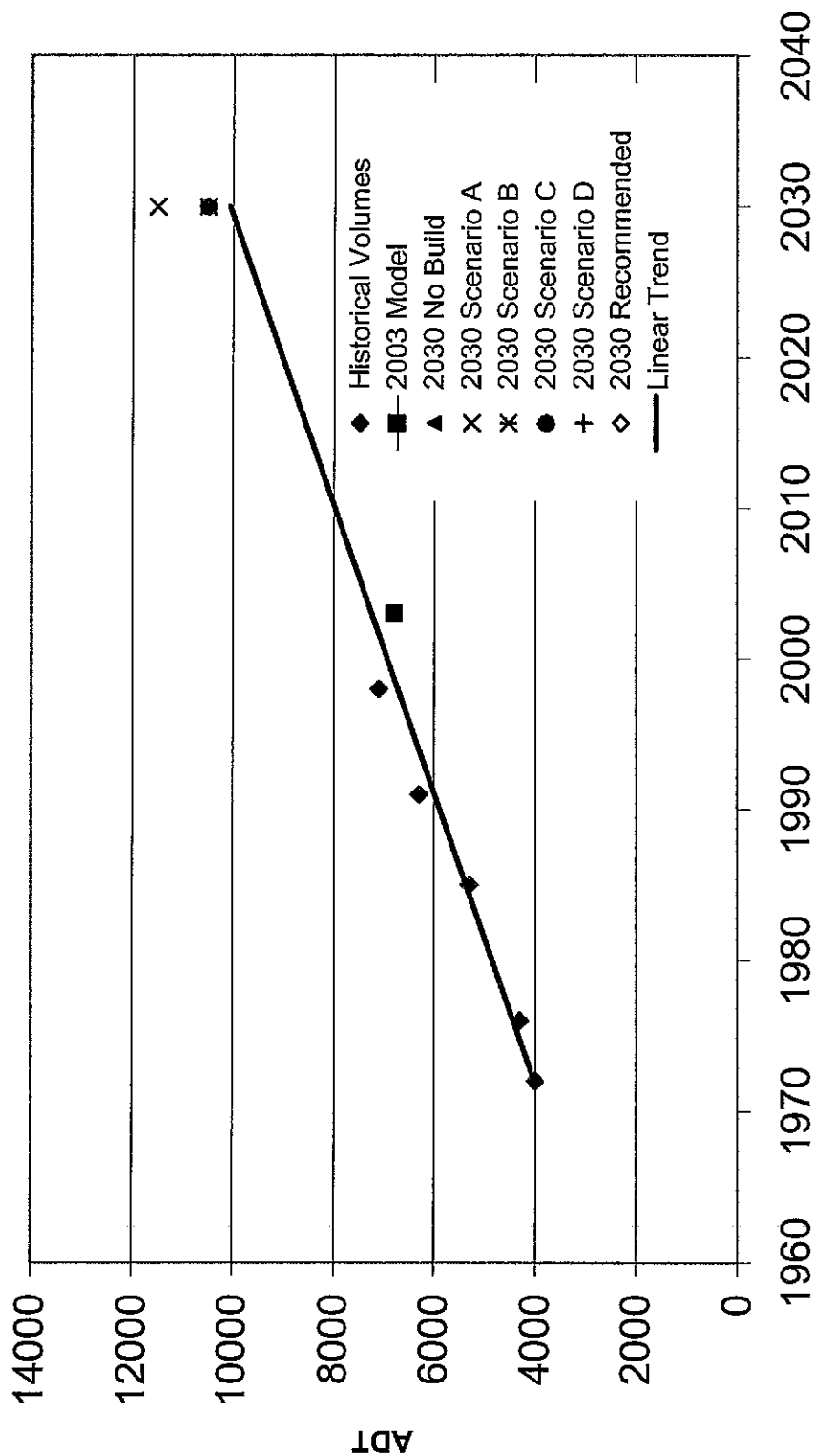
### Location 3: IL 4 (Woodside to I-72)



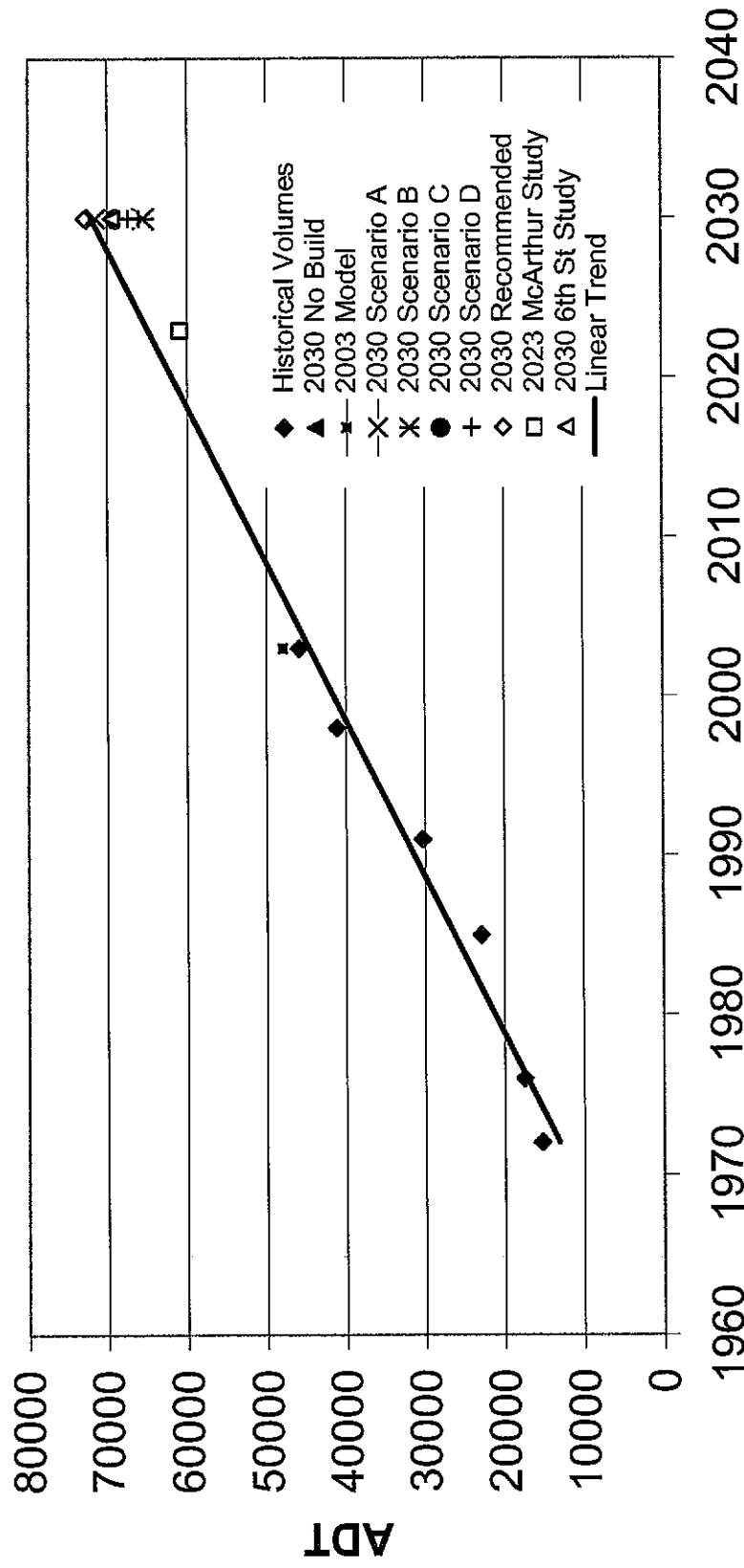
## Location 4: IL 4 S of Mansion Rd



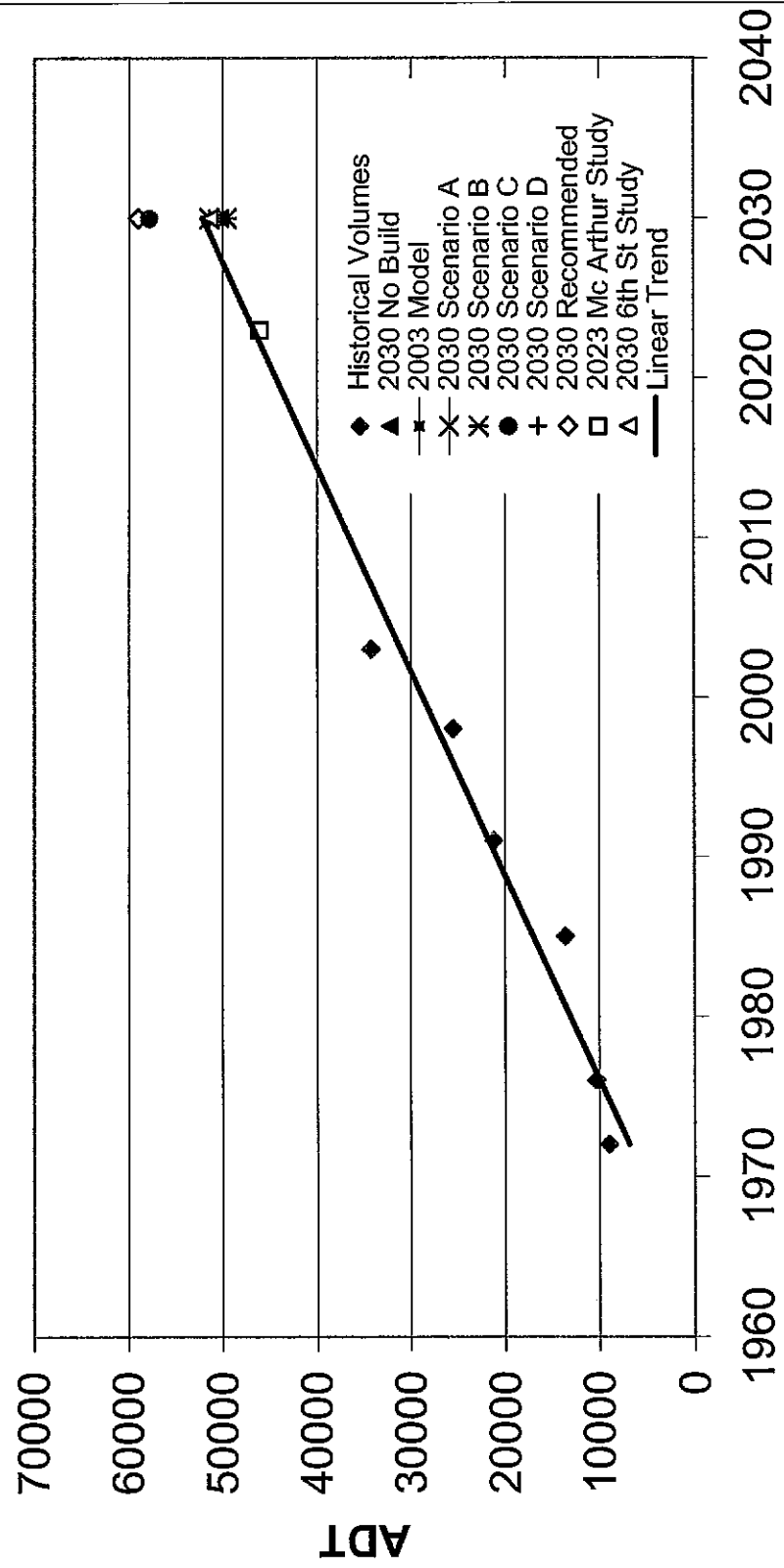
## Location 5: IL 4 (South of Chatham)



## Location 6: I-55/72 E of I-55

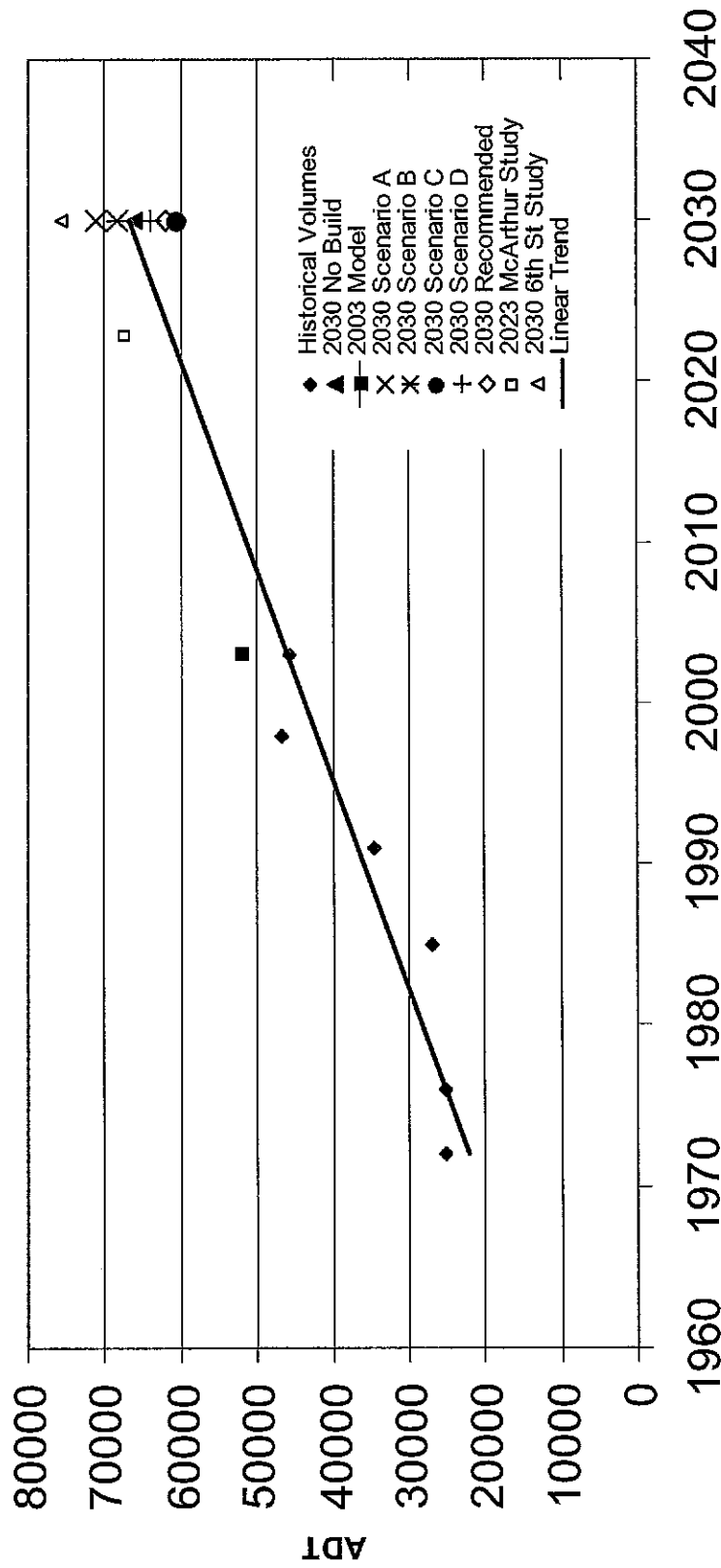


# Location 7: I-72 W of I-55

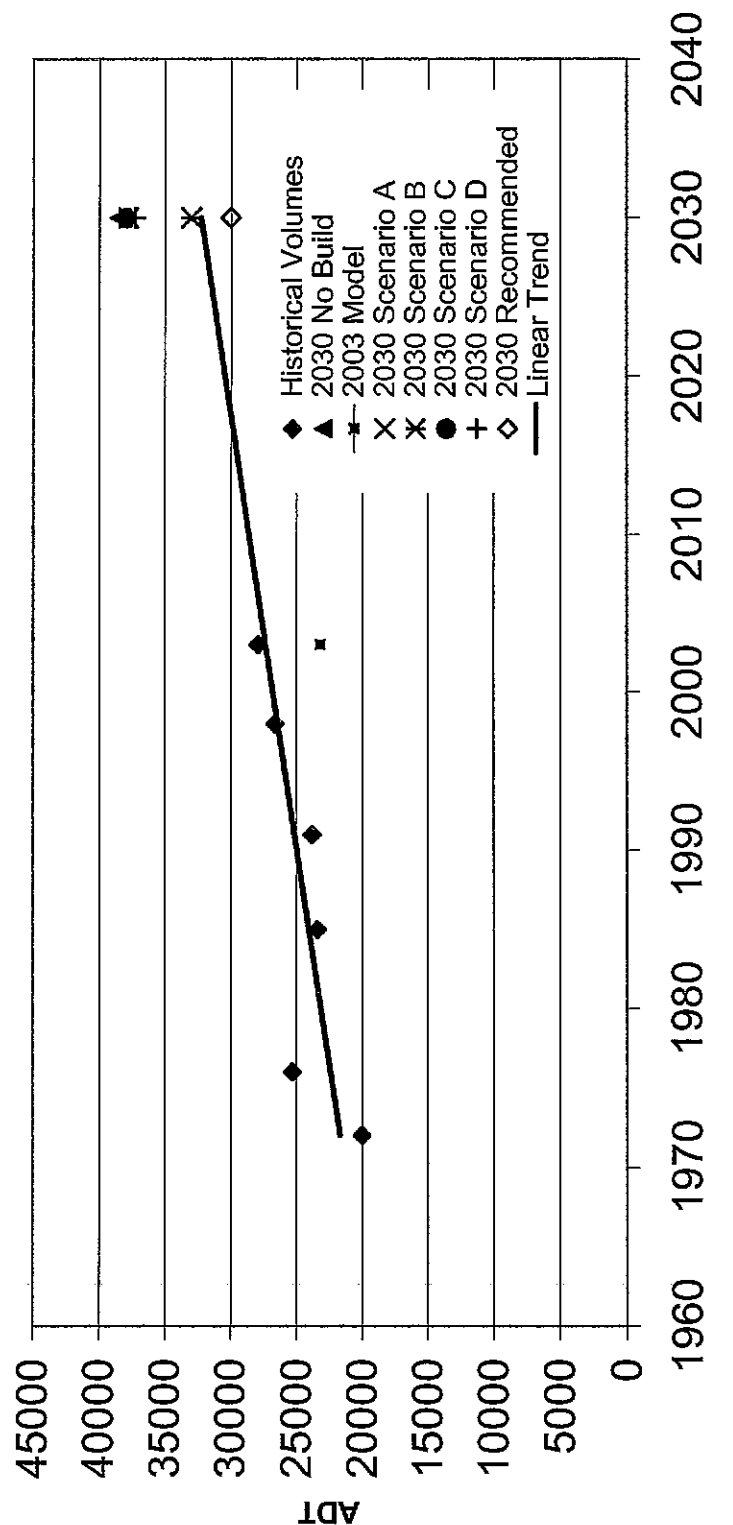




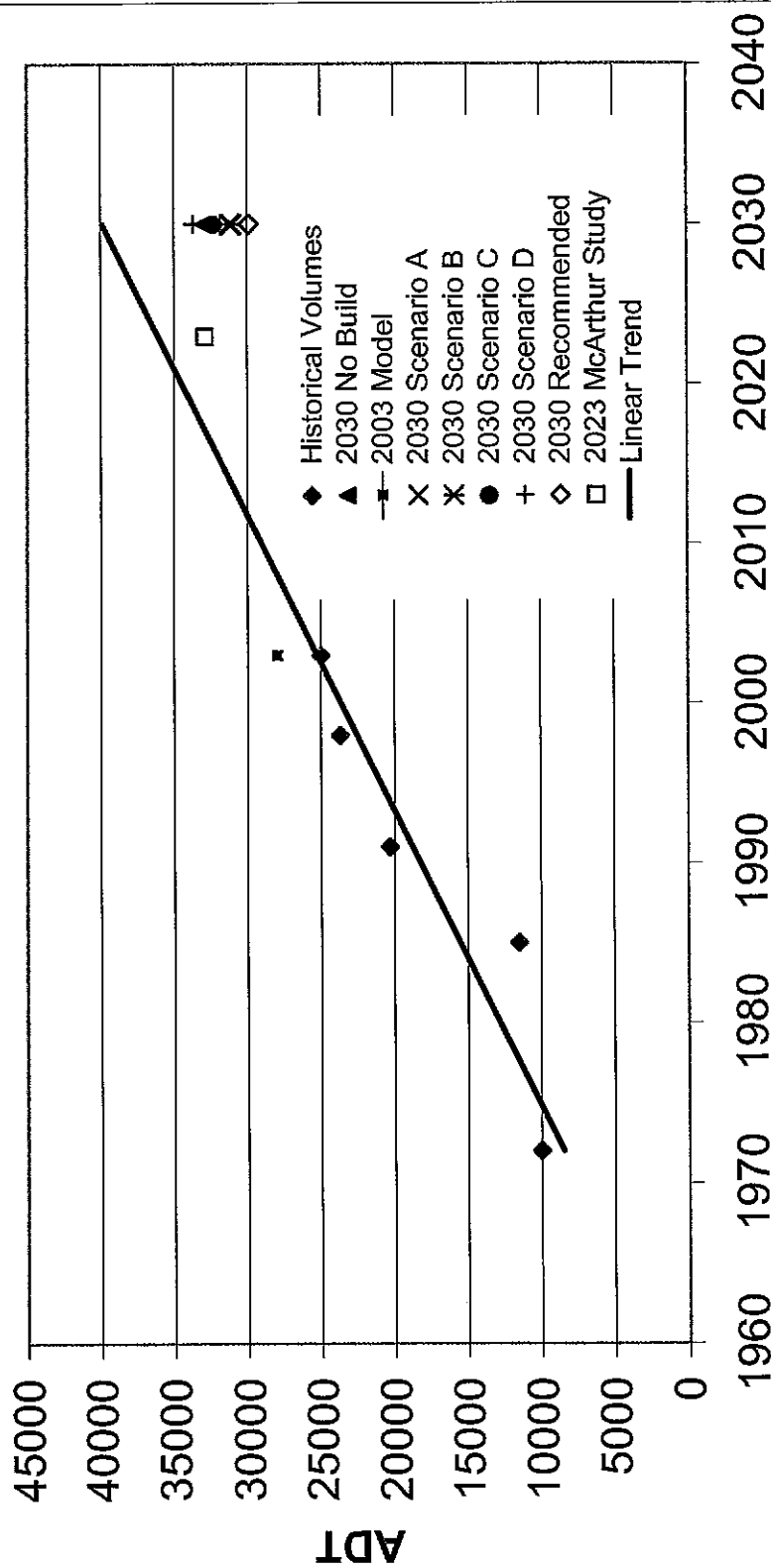
## Location 8: I-55 S of I-72



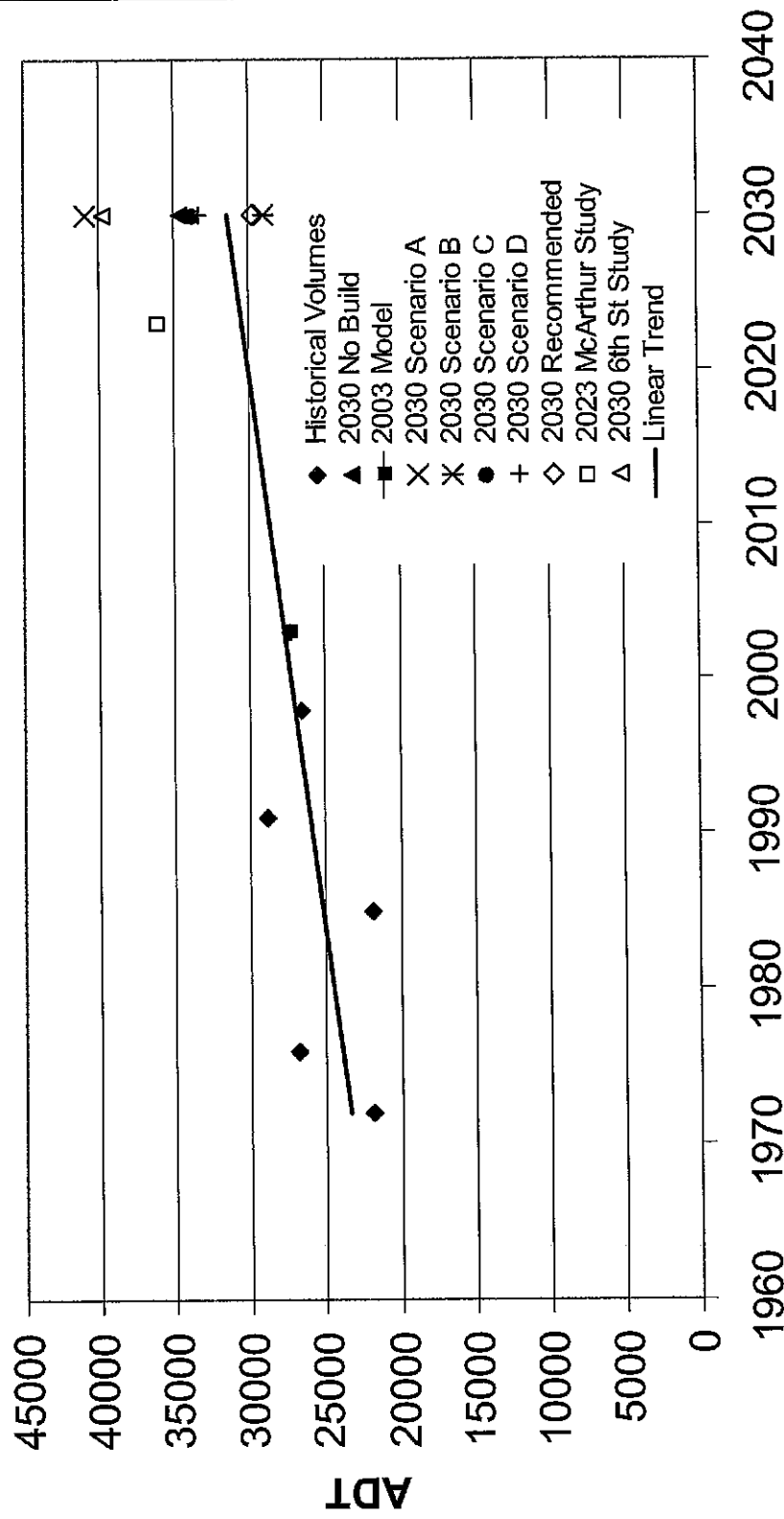
## Location 9: Stevenson Dr E of Bus 55



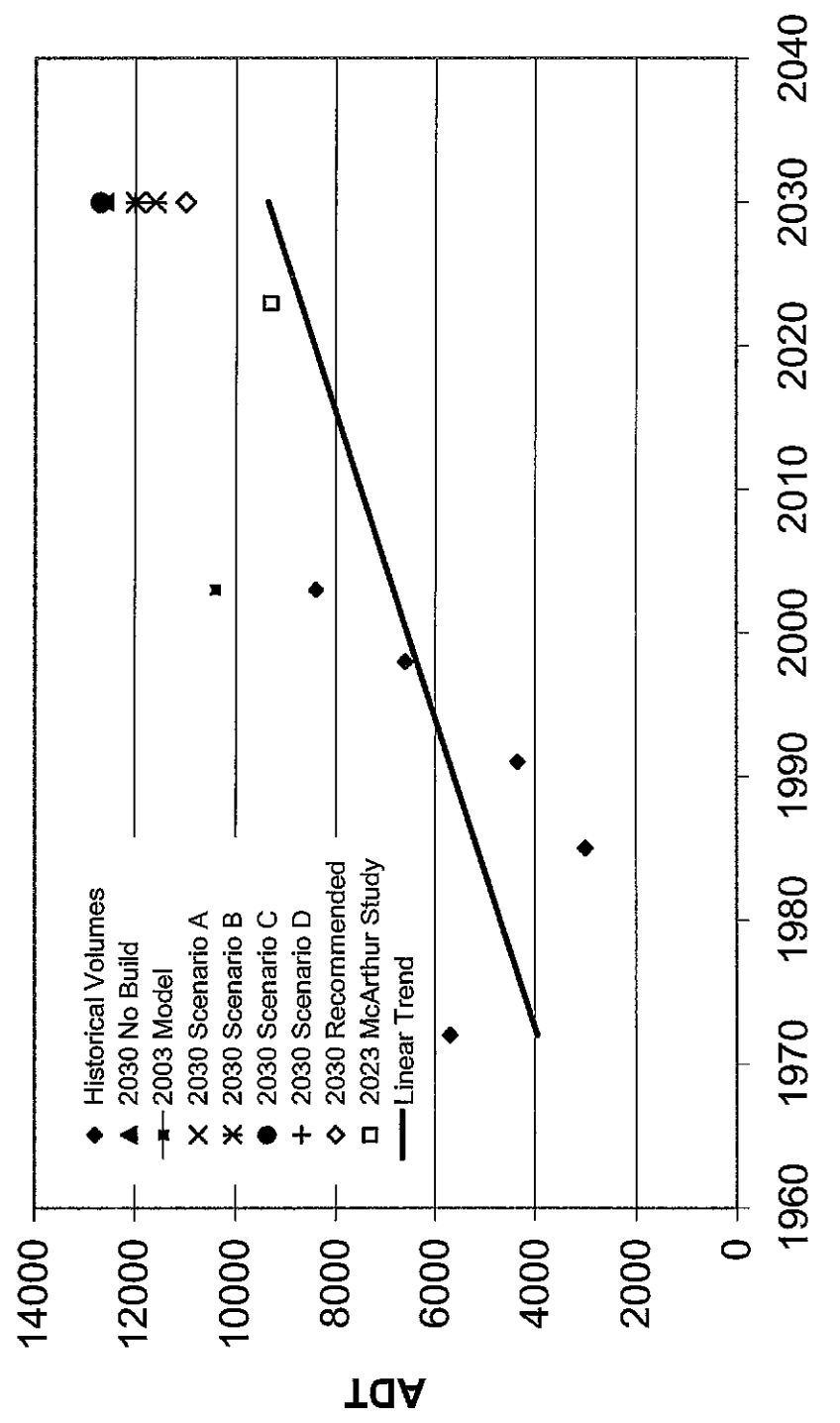
## Location 10: Wabash E of IL 4



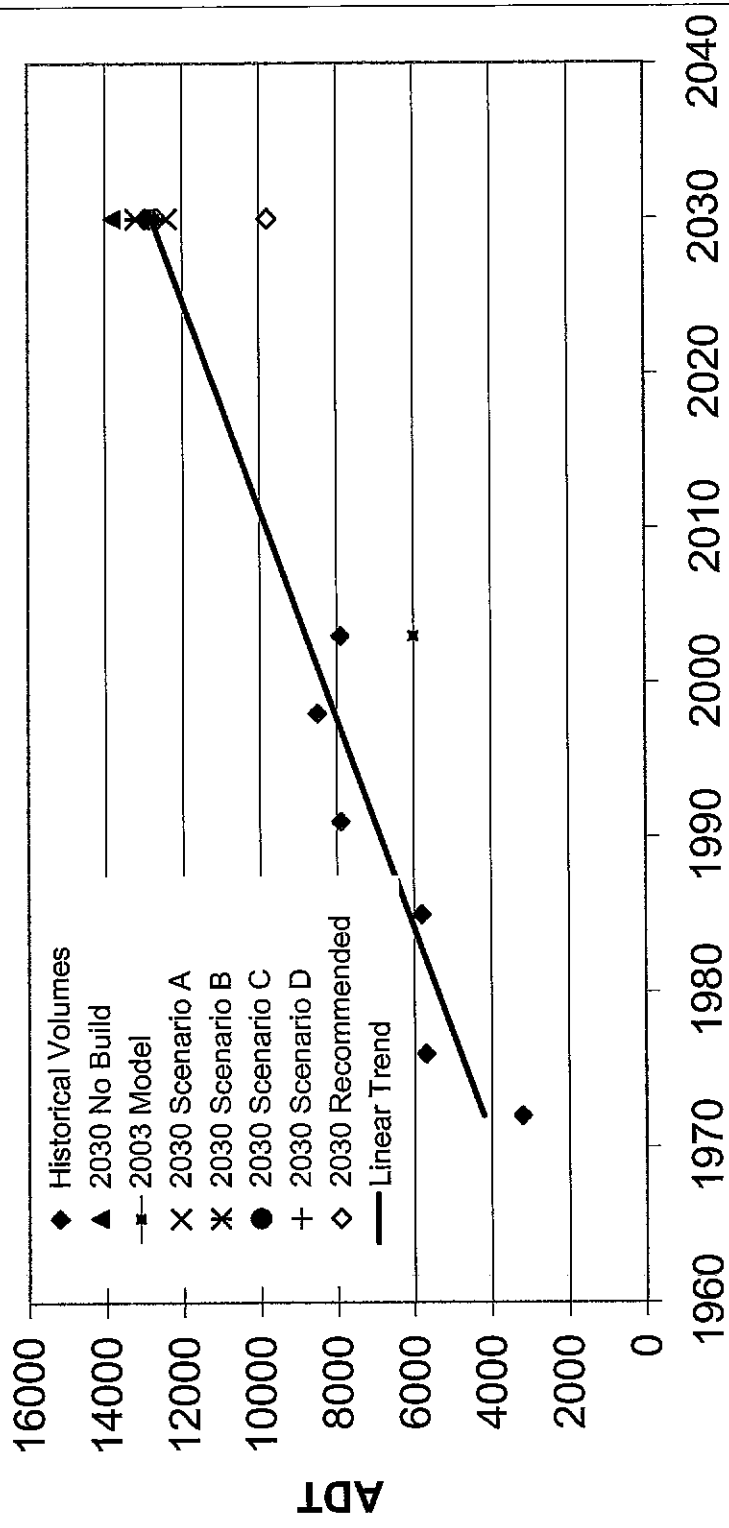
## Location 11: Bus 55 N of I-72



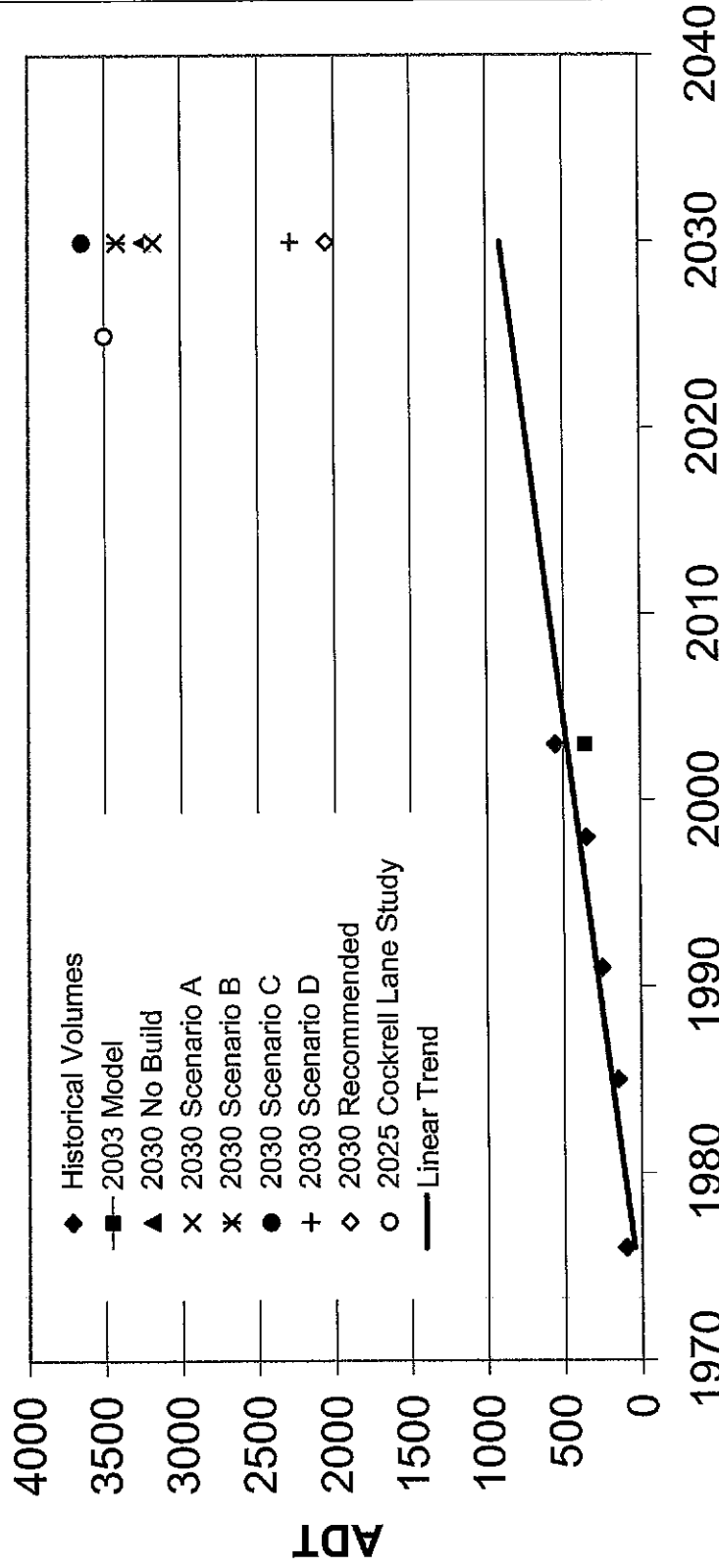
## Location 12: Chatham Rd N of CH 23



Location 13: CH 40 E of IL 4

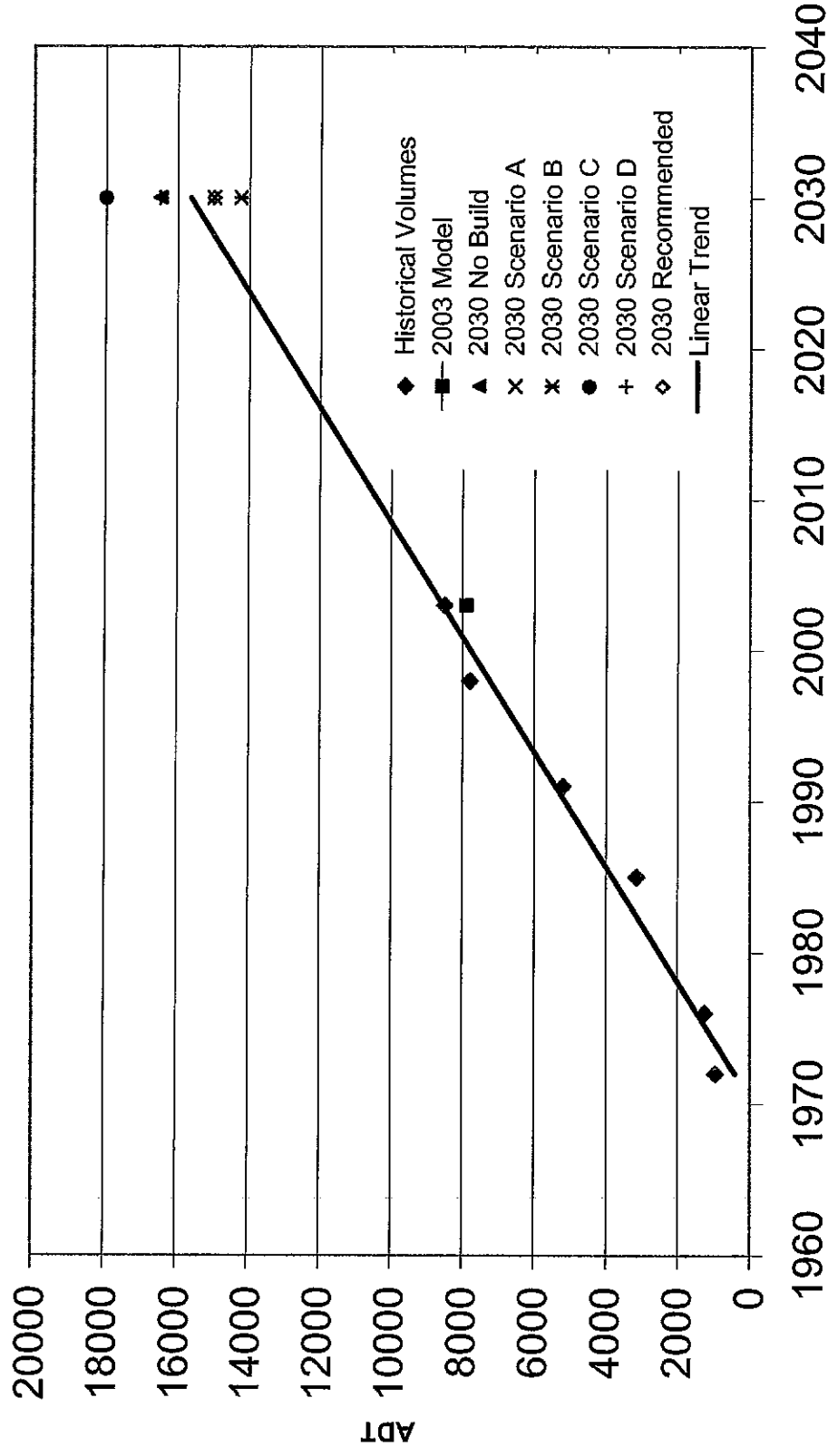


## Location 14: Cockrell Lane N of CH 23





## Location 15: Woodside Road (E of IL 4)



**APPENDIX D – Iron Bridge/Chatham Bypass Sensitivity Analysis  
(January 2005)**



Crawford, Bunte, Brammeier  
Traffic and Transportation Engineers

Since 1973

## Technical Memorandum (DRAFT)

**Date** January 18, 2005

**To:** Lou Dixon, P.E.  
Crawford, Murphy and Tilly, Inc.  
2750 W. Washington Street  
Springfield, IL. 62702  
217-787-8050

**Subject:** Springfield South Growth Study: Iron Bridge/Chatham Bypass Sensitivity Analysis

**Dear Mr. Dixon,**

Per your request we evaluated the potential impact that the construction of a Chatham Bypass would have on the need to widen Iron Bridge Road to 4 lanes. The following is a summary of our analysis.

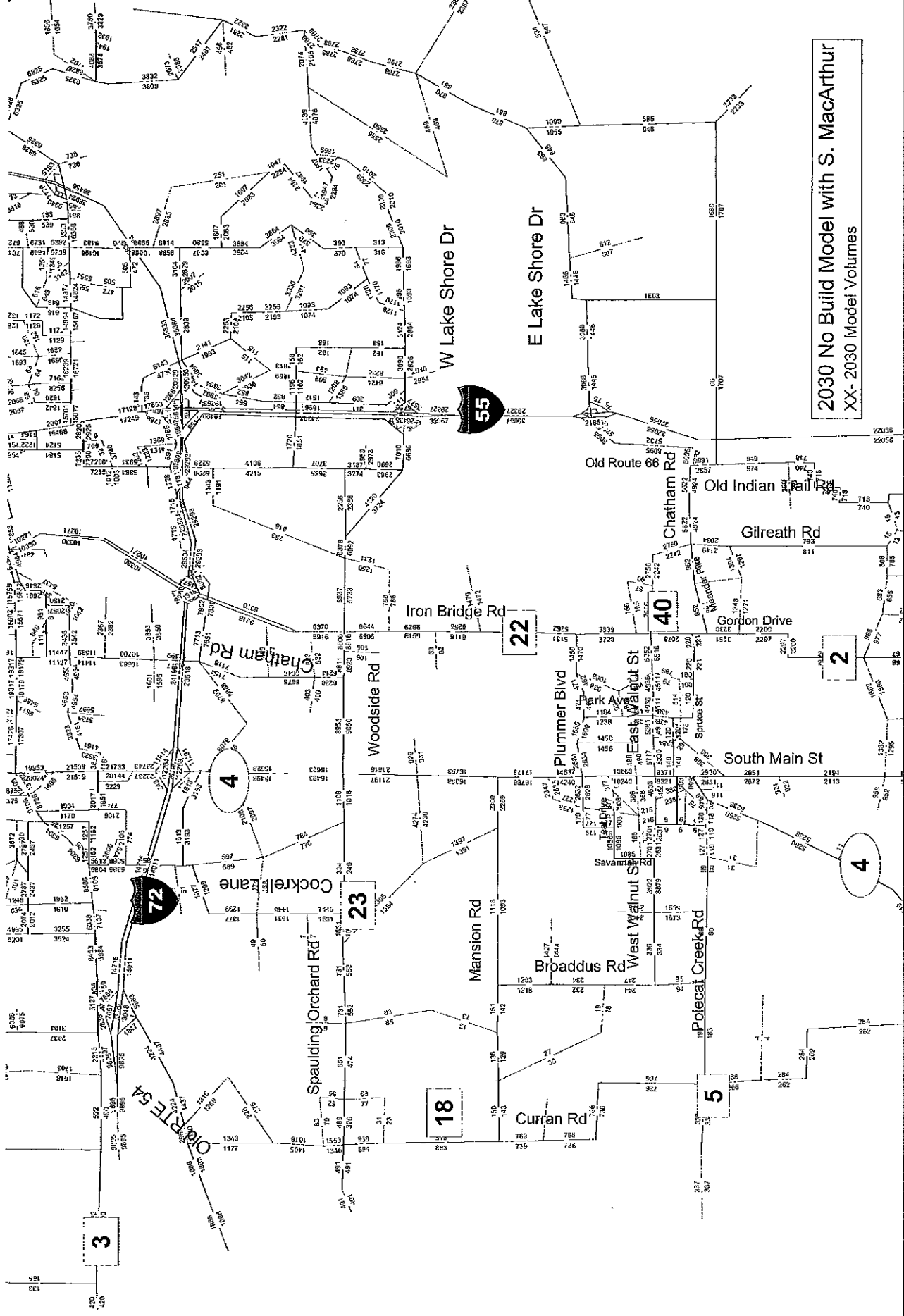
### *No-Build + S. MacArthur*

Under this scenario, Iron Bridge Road carries about 12,000-13,000 vpd south of Woodside Road with a V/C of about 0.95-1.03.

### *No-Build + S. MacArthur + Chatham Bypass*

Under this scenario Iron Bridge Road carries about 10,300-11,600 vpd south of Woodside Road with a V/C of about 0.8-0.9. If Route 4 between Woodside Road and Old Jacksonville Road is widened to 6 lanes Iron Bridge Road would be expected to carry about 10,000-11,400 vpd with a V/C of about 0.78-0.88. In this scenario Iron Bridge Road could function with 2 lanes but would be likely to experience moderate congestion during the peak periods. We would expect that about 1,500-2,000 vpd would be diverted from Iron Bridge Road to the Chatham By-Pass, as compared to the No-Build Scenario. This limited shift of traffic is due to the fact that the majority of the traffic to/from eastern part of Chatham would likely continue to use Iron Bridge Road as using the Chatham Bypass would be a circuitous route.

The volumes and V/C ratios for these scenarios are shown in the following figures.



2030 No Build Model with S. MacArthur  
XX- 2030 Model Volumes

